Case No.

42

Large Exhibits

Ex No1

April 26, 1943

At a meeting of the Lea County Operators Committee called on April 12, 1943, and held in Santa Fe on April 26, 1943, representatives of twenty-three operators were present of approximately ninety-eight operators who are members of the Lea County Operators Committee. The operators were polled and a majority of those present agreed that the following recommendations be presented to the Conservation Commission at its hearing called to consider "The application of the Lea County Operators Committee for a permanent gas-oil ratio order for the various fields located in Lea County; including a plan to permit the transfer of allowable from high gas-oil ratio wells to low gas-oil ratio wells, to prevent waste and to protect property rights", to be held at Santa Fe, April 27, 1943:

1. That a permanent gas-oil ratio order be promulgated.

2. That such permanent gas-oil ratio order provide for no exceptions without due notice and public hearing.

3. That no limiting gas-oil ratio be applied in Hardy, Penrose, Skelly, Mattix, Langlie, Rhodes, Lynn, Cooper and Jal Fields, for the following reasons:

(a) Two types of waste must be considered -- subsurface and surface. All fields mentioned above are nearing depletion and adequate reservoir energy exists to produce the remaining recoverable oil without subsurface waste. (See Exhibit "A" attached).

(b) In the case of the sand belt fields, namely, Hardy, Penrose, Skelly, Mattix, Langlie and Rhodes, approximately 55% of the gas is being utilized at present, and plans are completed and priorities have been granted for the equipment to make possible the utilization of approximately 10% of the gas, which will bring the total to approximately 65%.

(c) The Lynn, Cooper and Jal fields have a very active water drive. There are several wells which have high gas-oil ratios, but when the volume of fluid lifted is considered, the ratios are quite low considering the existing conditions in the reservoirs. Both from a geological study and results of remedial work, it can be stated that oil, gas and water are so closely associated within the reservoir that the segregation of one from the other two is very hazardous. Attempted remedial work in the three dolomitic limestone fields has usually proven unsuccessful and ultimately led to the abandonment of the well.

4. That the following limiting ratios be set for the other fields in Lea County, to-wit:

POOL OR AREA	GAS-OIL RATIO LIMIT
Arrowhead	3500
Corbin	2000
Eaves	4000
Eunice	6500
Halfway	2000
Hobbs	2500
Lynch	2000
Maljamar	4000
Monument	4000
North Lynch	2000
North Maljamar	2000
Skaggs	5000 4000
South Eunice	7000
South Livingston	2000
South Maljamar	2000
Vacuum	2000
West Eunice	2000
New and undesignated pools	2000

Wells in newly discovered or undesignated pools shall be allowed to produce with a limiting gas-oil ratio of 2,000 cubic feet per barrel for purposes of allocation until a hearing shall have been called and testimony presented upon which a ratio can be set. Such hearing shall be called and rules issued within six months after the completion of the discovery well or upon the completion of ten producing wells in the new pool, whichever occurs first.

No substantial subsurface waste exists in the fields listed above. In order to accomplish progress in the elimination of surface waste a mathematical approach was used in determining the limiting ratios. These limiting ratios were set so as to effect approximately the same percentage of units in each field.

5. That testing procedure for measuring gas-oil ratios, appended hereto as Exhibit "B", be adopted as Rules and Regulations of the Commission and not included as part of the gas-oil ratio order.

6. It is further recommended that in order to reduce the volume of gas produced, that the transfer of allowable from high to low gas-oil ratio units be permitted in all Lea County Fields under the following provisions:

(a) Transfer of allowable will be permitted only after application to and approval by the Commission. The application shall show 48-hour individual tests of production of oil, gas and water of the well from which transfer is requested and the well or wells receiving the transferred allowable. Such tests shall have been made within 30 days of date of submitting request for transfer. A plat of the wells involved shall be attached and also a statement of the amount of allowable to be transferred

to each such well. A copy of the application shall be furnished all offset operators by the applicant at the time same is submitted to the Conservation Commission.

(b) Permits to transfer shall be in force for a period of one year from date of approval, unless rescinded by the Commission. Renewals or changes may be obtained at the discretion of the Commission only upon submission of the information as shown in (a) above.

(c) Transfer of oil from one unit to another or others will be permitted only within contiguous shutting portions of the same basic lease or unitized area provided the areas involved shall not exceed 200 acres.

(d) Transfers of allowable oil can be made only to a unit or units with a lower gas-oil ratio.

(e) The amount of allowable transferred shall be the marginal or adjusted allowable for the unit, whichever is the smaller.

(f) No unit shall be permitted to produce an allowable in excess of the allowable for two units.

Test data supporting the above recommendations are submitted as Exhibit "C".

A PRESENTATION OF DATA RELATIVE FUTURE REMEDIAL WORK IN FIELDS HAVING RESERVOIR DEPLETION IN LEA COUNTY, NEW MEXICO — Exhibit A 1

Fields in Lea County New Mexico which are, within this report, considered to have made the nearest approach of any to depletion are:

1. Sand Pay types
   a. Hardy
   b. Mattix
   c. Penrose
   d. Skelly
2. Dolomitic limestone pay type
   a. Cooper
   b. Jal
   c. Lynn

Monthly production decline curves which show the calculated average field decline for the Hardy Field (Graph A-1); the Mattix Field (Graph A-2); the Penrose Field (Graph A-3) and the Skelly Field (Graph A-4) reflect the future recoverable oil (depleted to a monthly rate of 90 barrels) from these fields. The figures obtained are as follows:

FIELD	FUTURE RECOVERABLE OIL PER ACRE (BBL)	FUTURE RECOVERABLE OIL PER 40 ACRES
Hardy	163	6520 bbls.
Mattix	216	8640
Penrose	158	6320
Skelly	346	13840

Average per acre recovery for each of the above listed fields, and its age as of July 1, 1942 is as follows:

FIELD	PER ACRE RECOVERY TO 7-1-42	AGE OF FIELD AS OF 7-1-42
Hardy	889 bbls.	63 yrs.
Mattix	1055 "	7 "
Penrose	974 "	64 "
Skelly	883 "	61 "

The calculated ultimate recovery from these fields, based upon the foregoing tabulations is as follows:

FIELD	TOTAL PER ACRE RECOVERY
Hardy	1045 bbls.
Mattix	1271 "
Penrose	1132 "
Skelly	1229 "

Although reservoir pressure data on the above listed fields is not as complete as can be desired, the data which is available shows an average decline of 900 pounds to date with an average reservoir pressure of 900 pounds remaining.

Reservoir conditions within the Mattix Field are believed to be representative of those in the other three sand fields being considered. Therefore, a condition within the field can be accepted for the others.

Calculations show that within the Mattix Field 83 percent of ultimate oil recovery has been obtained with 68 percent of the effective reservoir pressure drop.

Production - Gas-oil ratio curves of the Hardy Field (Graph C-1), the Mattix Field (Graph C-2), the Penrose Field (Graph C-3) and the Skelly Field (Graph C-4) show, with exception of the Skelly Field, a definite downward trend in the total volume of gas being produced although gas-oil ratios are increasing. Such condition suggests a much more rapid depletion of oil than gas and when considered in light of the fact that, as stated above, 83 percent of the ultimate oil recovery has been made with 68 percent of the effective reservoir pressure, it leads to the question as to whether or not the rate of gas production and corresponding reservoir pressure drop will materially affect ultimate recovery of oil.

Exhibit A 0-2

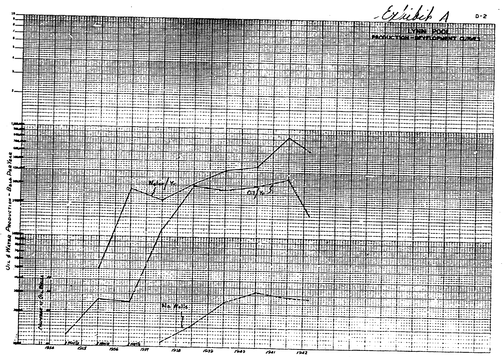

Exhibit A 0-3

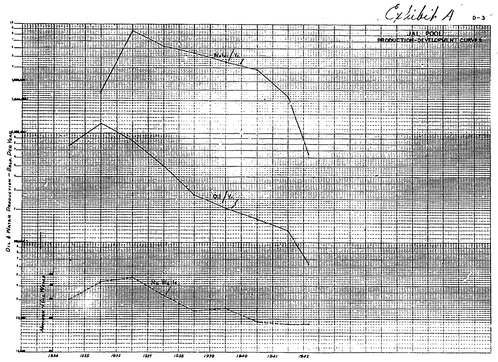

Exhibit A 0-4

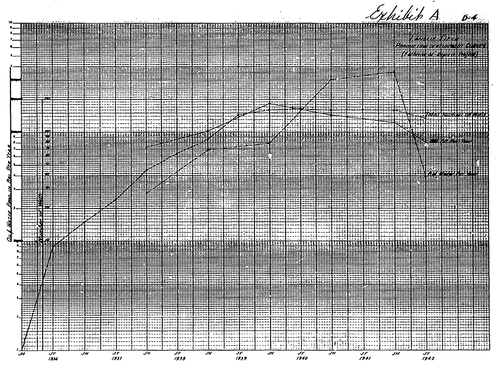

Exhibit A 9

	COOPER			JAL			LYNN		
YEAR	NO. WELLS	WATER BBLS.	OIL BBLS.	NO. WELLS	WATER BBLS.	OIL BBLS.	NO. WELLS	WATER BBLS.	OIL BBLS.
1931	22	no rpt.	324710	30	no rpt.	779956	3	no rpt.	12635
1932	82	2901890	2499112	44	2401895	1222712	3	51537	26988
1933	89	13200776	2888558	48	8746043	852235	3	272660	25617
1937	86	15404465	2237933	32	6369118	497722	11	215763	101804
1938	93	22404787	1652178	24	5735540	201675	16	308932	209299
1939	93	19718658	1297726	25	4528287	207395	26	402528	271593
1940	97	16114550	1151957	19	3871676	164454	32	444523	299676
1941	87	16707985	1032739	18	2162832	124171	29	833554	347384
8 mo. 1942	89	8175415	496552	18	653958	63849	28	620013	169640
		112648927	13691215		34497648	4185609		3154340	1543440

Decline of water production in the Jal Field as shown on Graph D-3 coincides with abandonment of certain oil wells. Decline of oil production within the Jal and Cooper Fields, as shown on Graph D-3 and Graph D-1, coincides with a period of one year of occurring with the greatest yearly increase of water.

Attempted remedial work in the three dolomitic limestone fields has often proven unsuccessful and ultimately led to complete abandonment. Both from a geologic study and results of remedial work it can be stated that oil, gas and water are so closely associated within a common reservoir that the segregation of one from the other two is very difficult and certainly economically unjustified.

Appended hereto will be found a partial list of remedial work performed in sand and dolomitic-limestone fields.

C.P. Miller
G.H. Gray
W.D. Mitchell

Exhibit A 11

DISCUSSION OF SAND AREA REMEDIAL WORK

Examination of remedial work aimed at reducing gas-oil ratios in the sand areas revealed that:

1. The close association of the gas with oil in the gas expansion type reservoir in narrow producing zones has offered little or no chance for the successful application of mechanical separation methods.

2. A large percentage of the wells were shot heavily on completion to obtain production from the tight formation, therefore, mechanical control is impossible.

3. In general, the few jobs that have been effective or partially effective have only been temporarily so.

TYPICAL REMEDIAL RESULTS DOLOMITIC LIME FIELDS

COOPER

Phillips Pet. C.D. Woolworth #12 26-24-36
1941 T.D. 3325
Packer 3311 - after GL above packer 50 bbl water/hr
Packer 3264 - after GL above packer 54 bbls water/hr
Retainer 3237 and 100 sax cement. After washed dry
20% acid after - no oil, gas or water S.I.

Gulf Oil Corp. Am. Ramsey #2 2-25S-36E
1941 Squeezed 150 sax below retainer @ 3411
Before OL 25 oil; 150%0 water
After pumped 30 oil; 10 water
3000 acid; pumped 21 oil; 120 water

Amerada Pet. Corp. Everett #2 34-24-36
1941 3350 TD
30 sax below retainer @ 3275
Before testing 100% water
After washed dry - shut in and abandoned

Gulf Oil Corp. G.S. Cooper No. 1 11-24S-36E
Completed 8-4-35 Initial potential 1122 oil; no water
on 11-14-35 started making 100% water and died.
Perf. upper zone to obtain more gas and put on gas
lift. Made 121 oil.
Present production 70 oil; 5400 water on gas lift.
If shut in the well must be flowed from one to two
weeks before oil is obtained

JAL

Continental C. Sholes B 13-25S-36E
Completed 2-26-33 initially no water

5-5-33	15% water
5-11-33	20% "
10-8-33	25% "
10-13-33	35% "
12-7-33	50%+ "
12-14-33	75% "
1-6-34	80% "
3-10-34	85% "

3-25-34 FB 15 sax, 3370-3343
5-4-34 Squ TO oil BLC water
5-21-34 FB 20 sax, 3343-3315
6-29-34 ½ bbls. fluid; 100% water
S.I. FT for gas well

LYNN

Shell Oil Co. Whitten No. 1 33-23S-36E
1940 reduce # 3175 reduced gas-oil ratio
from 3100 to 725

Exhibit A

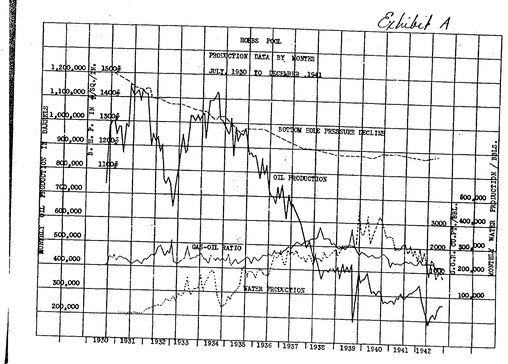

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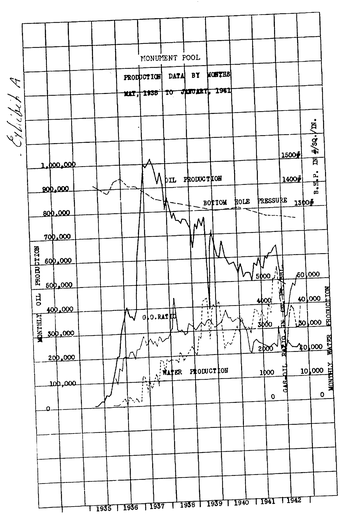
Exhibit A



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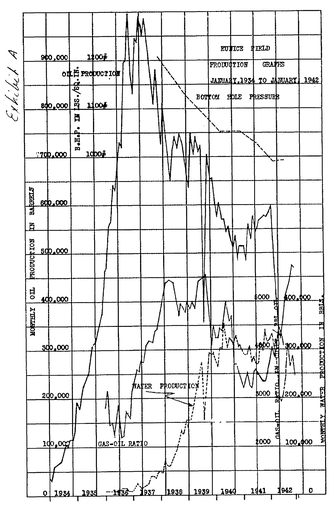

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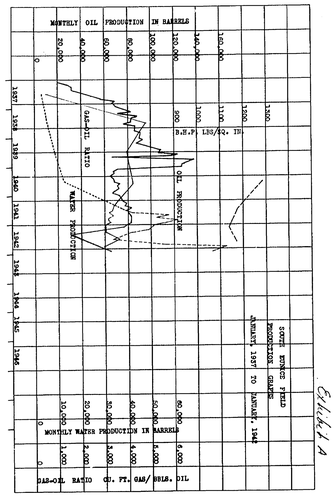


Exhibit A B-2

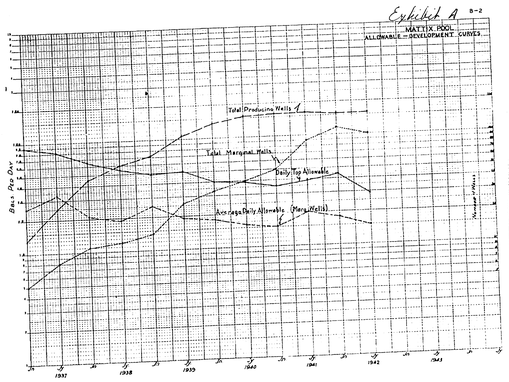
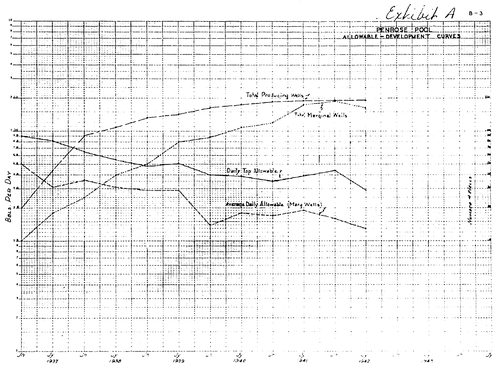


Exhibit A B-3



Ex #01

April 26, 1943

At a meeting of the Lea County Operators Committee called on April 12, 1943, and held in Santa Fe on April 26, 1943, representatives of twenty-three operators were present of approximately ninety-eight operators who are members of the Lea County Operators Committee. The operators were polled and a majority of those present agreed that the following recommendations be presented to the Conservation Commission at its hearing called to consider "The application of the Lea County Operators Committee for a permanent gas-oil ratio order for the various fields located in Lea County; including a plan to permit the transfer of allowable from high gas-oil ratio wells to low gas-oil ratio wells, to prevent waste and to protect property rights", to be held at Santa Fe, April 27, 1943:

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(b) In the case of the sand belt fields, namely, Hardy, Penrose, Skelly, Mattix, Langlie and Rhodes, approximately 55% of the gas is being utilized at present, and plans are completed and priorities have been granted for the equipment to make possible the utilization of approximately 10% of the gas, which will bring the total to approximately 65%. (an estimate)

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Wells in newly discovered or undesignated pools shall be allowed to produce with a limiting gas-oil ratio of 2,000 cubic feet per barrel for purposes of allocation until a hearing shall have been called and testimony presented upon which a ratio can be set. Such hearing shall be called and rules issued within six months after the completion of the discovery well or upon the completion of ten producing wells in the new pool, whichever occurs first.

No substantial subsurface waste exists in the fields listed above. In order to accomplish progress in the elimination of surface waste a mathematical approach was used in determining the limiting ratios. These limiting ratios were set so as to affect approximately the same percentage of units in each field.

5. That testing procedure for measuring gas-oil ratios, appended hereto as Exhibit "B", be adopted as Rules and Regulations of the Commission and not included as part of the gas-oil ratio order.

6. It is further recommended that in order to reduce the volume of gas produced, that the transfer of allowable from high to low gas-oil ratio units be permitted in all Lea County Fields under the following provisions:

(a) Transfer of allowable will be permitted only after application to and approval by the Commission. The application shall show 48-hour individual tests of production of oil, gas and water of the well from which transfer is requested and the well or wells receiving the transferred allowable. Such tests shall have been made within 30 days of date of submitting request for transfer. A plat of the wells involved shall be attached and also a statement of the amount of allowable to be transferred

to each such well. A copy of the application shall be furnished all offset operators by the applicant at the time same is submitted to the Conservation Commission.

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(d) Transfers of allowable oil can be made only to a unit or units with a lower gas-oil ratio.

(e) The amount of allowable transferred shall be the marginal or adjusted allowable for the unit, whichever is the smaller.

(f) No unit shall be permitted to produce an allowable in excess of the allowable for two units.

Test data supporting the above recommendations are submitted as Exhibit "C".

The ability of each field to produce is reflected graphically by allowable development curves on the Hardy Field (Graph B-1), Mattix Field (Graph B-2), Penrose Field (Graph B-3) and Skelly Field (Graph B-4). These curves show the continuous decline of the daily top allowable per well; the average daily allowable per marginal well and the rapidly approaching marginal condition of all the sand fields.

A tabulation is presented herewith to show the relationship of water to total fluid produced to date in each of the sand fields.

JULY 1, 1942

	TOTAL OIL	TOTAL WATER	TOTAL FLUID	% OF WATER TO TOTAL FLUID
Hardy	4,232,924	34,066	4,266,990	0.7
Mattix	6,581,969	127,647	6,709,616	1.9
Penrose	7,362,993	73,507	7,436,500	0.98
Skelly	2,895,123	45,104	2,940,227	1.53
			Ave.	1.27

Estimated average field reservoir pressure drop = 900 pounds

The relationship of water produced to total fluid together with consideration of the reservoir pressure drop justifies the opinion that the sand fields are dominantly volumetric drive reservoirs.

An exact count of the number of sand field wells which have been shot is not readily available. However, it is believed that 75 percent of total completions is a conservative estimate.

In as much as calculations have shown that 17 percent of the future recoverable oil can be produced by 32 percent of the effective remaining reservoir energy, it is apparent that a surplus of flowing energy exists. However, it is also apparent that the future recoverable oil is so small that the expenditure necessary for remedial work in pay sections that have been shot is not economically justified.

If, as stated above, the relationship of water produced to total fluid together with consideration of reservoir pressure drop can be used as a means of identifying the type of reservoir drive within a field it is then evident, as shown by the following tabulation, that the Cooper, Jal and Lynn dolomitic-limestone fields are dominantly hydrostatic drive reservoirs.

SEPTEMBER 1, 1942

	TOTAL OIL	TOTAL WATER	TOTAL FLUID	% WATER TO TOTAL FLUID
Cooper	13,691,315	116,459,927	130,150,242	89.48
Jal	4,169,609	34,487,648	38,677,257	89.16
Lynn	1,543,146	3,156,340	4,697,780	67.14
			Ave.	81.92

Estimated average field reservoir pressure drop = 150 pounds

Production- Development curves on the Cooper Field (Graph D-1) the Lynn Field (Graph D-2) and the Jal Field (Graph D-3) show the rapid rate of increase of water during the early lives of the dolomitic-limestone fields. Such an increase possibly reflects the inability of operators to segregate, by remedial work, water from the oil.

A tabulation is herewith presented to show water and oil production per well per year in the three dolomitic-limestone fields.

Exhibit A D-2

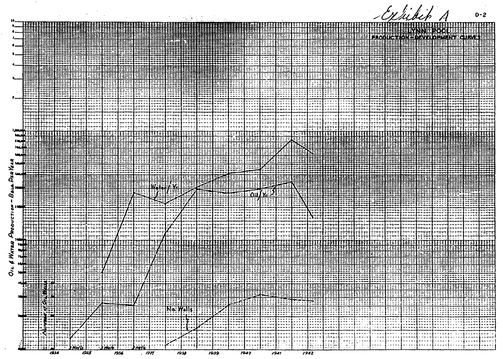

Exhibit A D-3

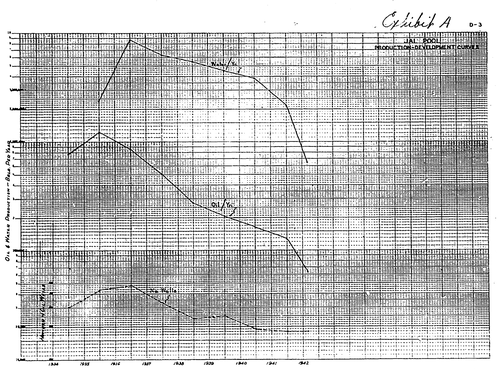

Exhibit A D-4

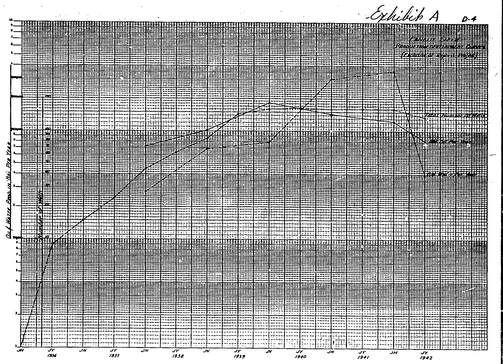

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Exhibit A

TYPICAL REMEDIAL RESULTS-SAND FIELDS

HARDY

Gulf Oil Corp. No. 1 Mattern C 18-21S-37E
1941 set packer @ 3730 2000 acid below
Before gas-oil ratio 23958
After " " 3998

PENROSE

Continental Elliott Bay No. 1 9-22S-37E
1938 packer @ 3924
Before gas-oil ratio 35454
After " " " 16231

1940

WORK PERFORMED — TEST — APTZ%
Acid 1000 gal. (3640-3714) — Oil 31 — Gas MCF 824
Shot 30 qts. (3714-3726) — " 23 — " 561
Set pkr. 13 times in zone (3550-3680) — " 12½ — " 971 best test
1500 gal. formation plug (sag-3556) — " 4 — " 848
Shut well on account of high gas-oil ratio

Continental Elliott A-15 No. 2 15-22S-37E
1938 packer @ 3934;
Before gas-oil ratio 39000
After " " " 14000
Reset packer 3638
Before gas-oil ratio 14000
After " " " " 16663
Present gas-oil ratio 24320

MATTIX

Repollo Oil Co. Mosely #4 34-24S-37E
1940 shot 200 qts. 3355-3435 (lower pay) solid stemming; packer @ 3324
Before work 30 oil; gas-oil ratio 44000
After workover 72 " " " " 19153
Present production 11 " " " " 59978

Anderson Prichard Oil Co. State A #1 32-24S-37E
1941 Shot 90 qts. 3910-3940 solid stemming
Before 65 oil; gas-oil ratio 27000
After 61 " " " 7885
Now " " " 37301

Anderson Prichard State A No. 2 32-24S-37E
1941 set pkr. 4 times with no beneficial results
Shot 120 qts. 3907.34 solid stemming
Before 105 oil; 1062 MCF gas
After 106 " " 7350 gas-oil ratio
Now 31682 " " "

Stanolind Oil & Gas C. Meyers A-2 22-24S-37E
1941 treated with 1500 gal. formation plug
Before gas-oil ratio 32000
After " " " 16000
Since increased gas-oil ratio 39780 now

SKELLY

Anderson Prichard Blinebry No. 1 29-23S-37E
March 1941 set packer @ 3540 - no change in oil or gas production - no suitable packer seat was available below 3540, therefore, further attempts were not made.
Present gas-oil ratio 20799

Exhibit A

Continental Farney A No. 2 5-23S-36E
1941 before 13 oil; 7 water; 23618 gas-oil ratio
Packer set @ 3734
Below packer 0 oil; 4 water; 186 MCF
Above packer 41 oil; 7 water; 30688 gas-oil ratio
Packer 3660
Below 0 oil; 12 water; 200 MCF
Above 38 oil; 17 water; 24200 gas-oil ratio
Now 12 oil; no water; 38073 gas-oil ratio

DISCUSSION OF REMEDIAL RESULTS IN THE COOPER, LYNN AND JAL FIELDS

The study of numerous remedial jobs performed in the dolomitic lime fields in the southern portion of the county of which a few typical examples have been outlined above, brings forth the general conclusions:

1. The particular fields are characterized by early water invasion, control of which has been proven futile in the history of many wells. Water shut off has been accomplished almost universally at the cost of the entire oil production capacity of the well, resulting in many abandonments.

2. High gas-oil ratios in these fields are the necessary evil which must accompany natural flow of large fluid volumes only a small portion of which is oil.

Exhibit A

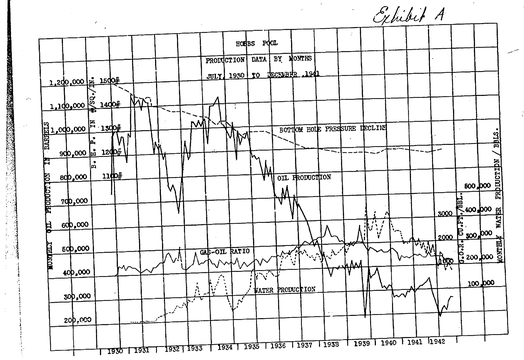
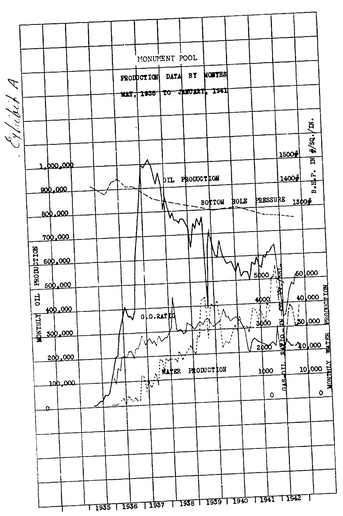


Exhibit A



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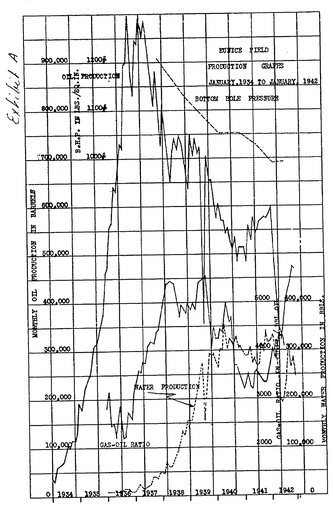

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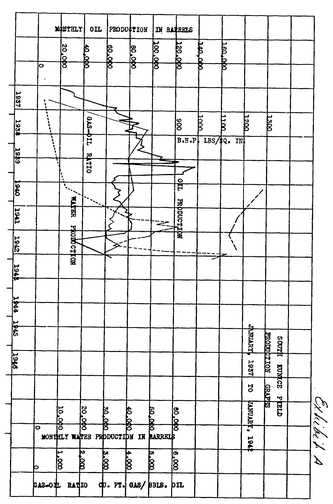

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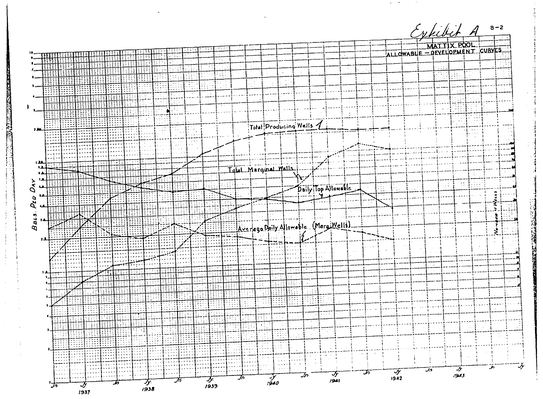

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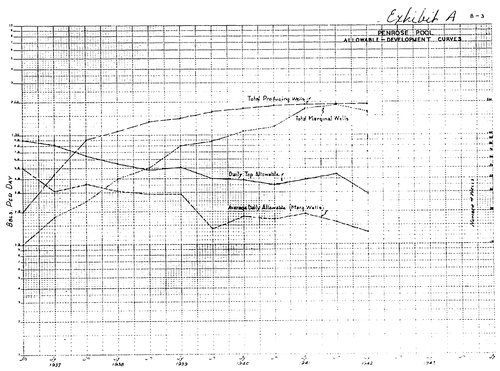

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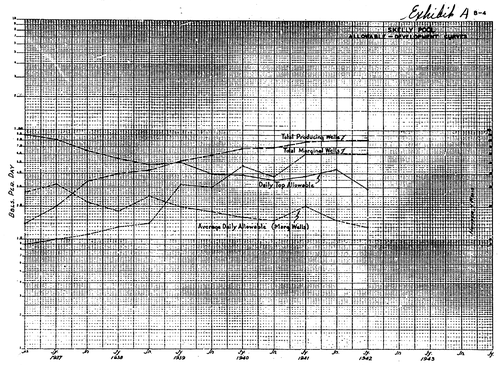

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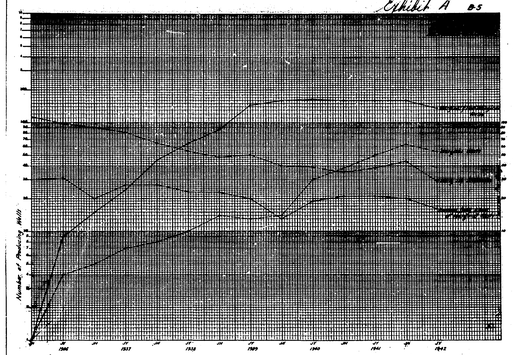

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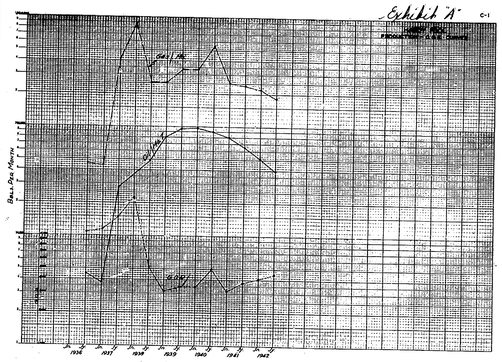

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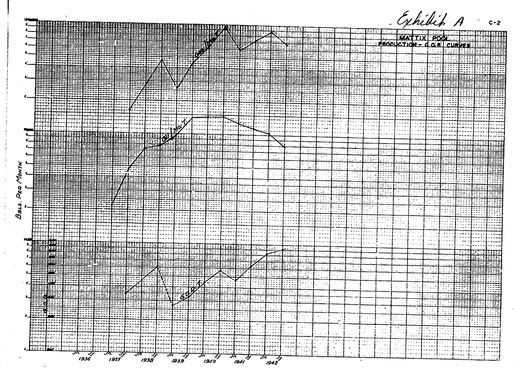

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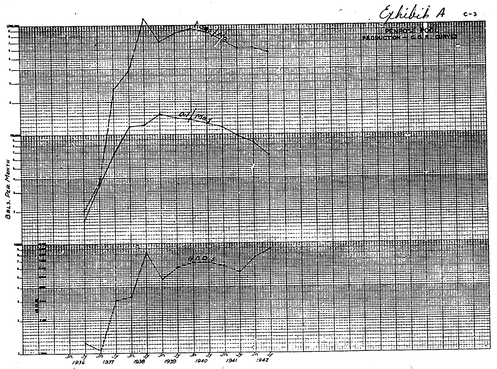

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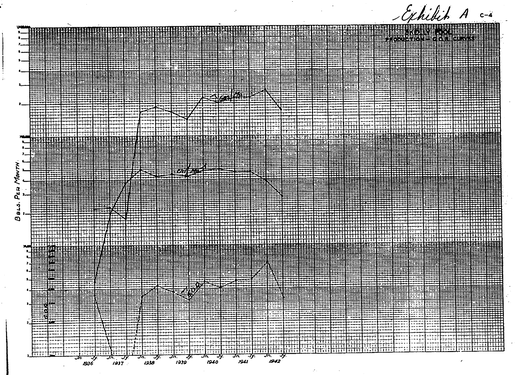

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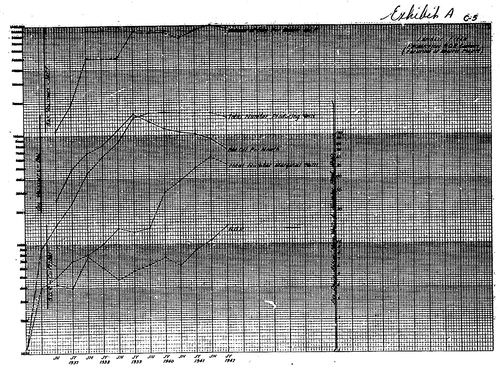

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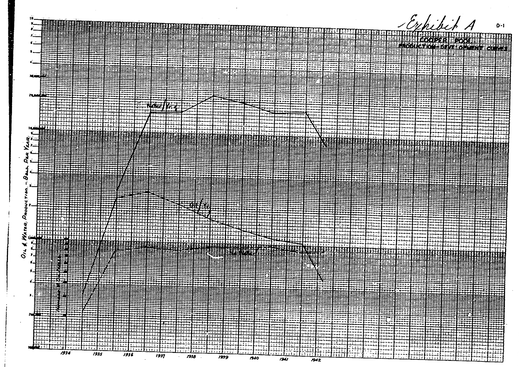

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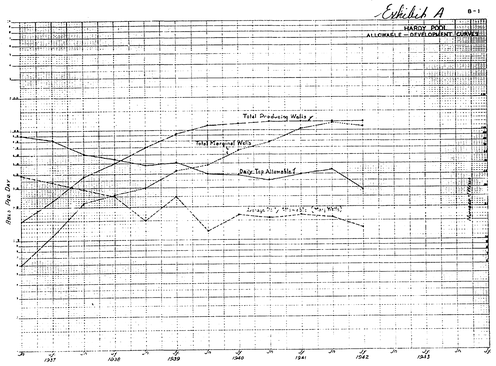

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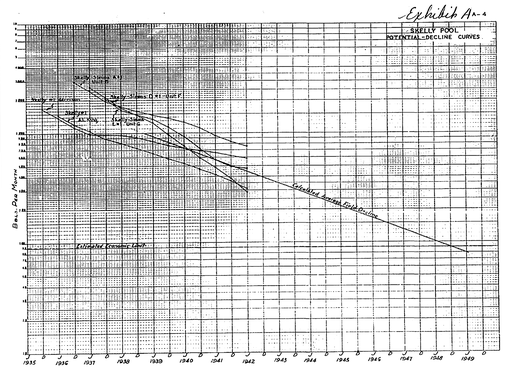

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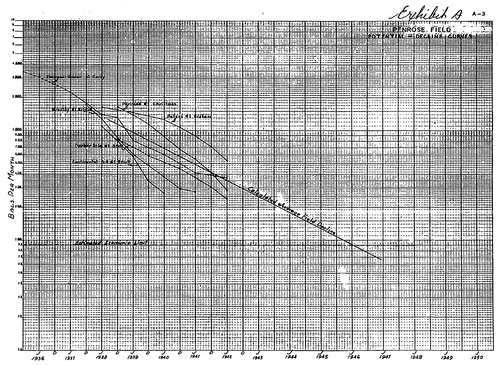

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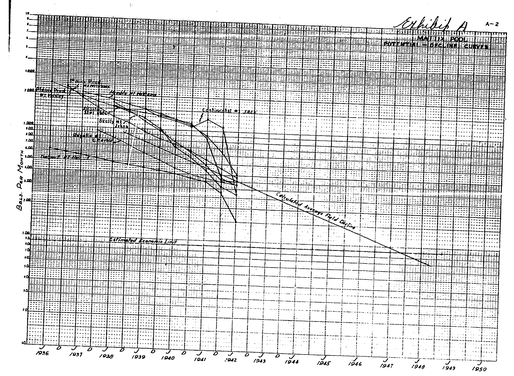

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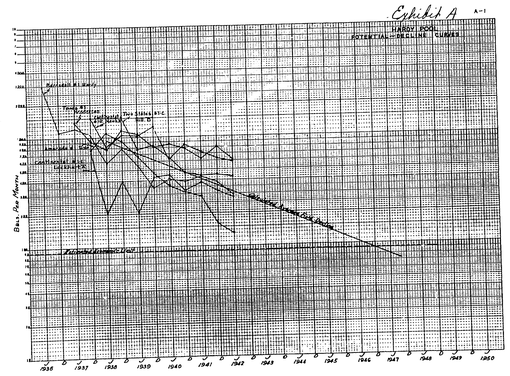

EXHIBIT "B"

TESTING PROCEDURE

All operating gas-oil ratio tests shall be taken by or under the supervision of the New Mexico Oil Conservation Commission hereinafter designated as "The Commission".

1. Operator

The operator shall: Upon request of the Deputy of the Commission, (a) equip each well to make conveniently a gas-oil ratio test; (b) furnish the Deputy of the Commission a complete list of his wells showing the type and dimensions of metering equipment best adapted for accurate gas measurement in accordance with rules contained herein; (c) furnish sufficient and qualified lease labor to install and manipulate all lease equipment in preparation for and during gas-oil ratio tests conducted in accordance with this order.

2. The Commission

The Commission shall: (a) Assemble the information supplied by the operators as recommended above, and arrange test schedules; (b) assign engineers to make tests and act as official witnesses. Only in the event of an emergency shall company engineers be used as official witnesses. (c) Instruct all personnel in the proper operation of measuring equipment and procedure in conducting the tests; (d) calibrate all metering equipment; (e) furnish, calculate, record and file all gas measurement charts and records; (f) compute all gas-oil ratios.

3. Official Witness

The official witness shall take such action as may be necessary to accomplish the desired purpose.

4. Manner of Testing

(a) The flow period shall be 48 hours, except as hereinafter stated. The first 24 hours shall be the stabilization period and the last 24 hours shall be the period during which the well is tested.
(b) Oil shall be gauged at the beginning and ending of each 24 hour period and gas shall be measured during the period wherein the well is tested. No change in the rate of flow shall be made during the last 36 hours of the 48 hour flow period and said flow shall approach as nearly as possible the unadjusted current allowable rate.
(c) Should an operator elect to flow a well at a rate less than the unadjusted current allowable then, and in that event, the rate of flow for proration purpose on said wells shall not exceed the rate at which the gas-oil ratio test was made.
(d) In case of a stio-cooked well, the oil and gas shall be measured for the time it is produced.
(e) For gas lift or jetted wells the total volume of gas to be used in computing the operating gas/oil ratio is the total output volume minus the total input volume.

EXHIBIT "B"
Page 2

5. Liquid Measurements

(a) All tanks shall be gauged and total volume of fluids determined according to accepted oil field practice.
(b) The net volume of oil shall be the total volume of fluid less the volume of B.S.&W.
(c) Fluid level in the separator must be maintained relatively constant so that the oil dump valve is covered at all times by at least 12 inches of liquid.
(d) If it is necessary to use a flowtank for the separation of water the water-oil level must be the same at the beginning and end of the test.

6. Gas Measurement

(a) A pressure gauge shall be installed on each separator and readings taken periodically. In the event the operator chooses to conduct the test at a separator pressure in excess of 100 pounds a recording pressure gauge shall be installed on the separator and the measured gas shall be increased by the measured or calculated volume going to the tanks. Calculated volume shall be based on the gas-pseudoliquid versus pressure curves for the field or area in which the well is located.
(b) For computing the volume of all gas produced the following standards shall be used: Pressure - 10 ounces above an atmospheric pressure of 14.4 pounds per square inch; temperature - 60 degrees Fahrenheit; specific gravity - 0.65 as compared to air. In case the gas measurement is made at a pressure in excess of 100 pounds, the measurements shall be adjusted in accordance to deviation from Boyles Law. The gas volumes shall be computed in cubic feet and gas-oil ratios in cubic feet per barrel of oil.
(c) Orifice well testers, orifice meters and side pressures test nipples are approved. Side pressure nipples shall be used only when it is necessary to measure volumes larger than can conveniently be measured by orifice meters. A standard set of tables for each device will be on file in the office of the Deputy of the Commission.

7. Any well that cannot be tested under the preceding rules shall be referred to the Commission for special consideration and rules.

Exhibit C

STANOLIND (MONUMENT)-CONTD:
Wells with producing ratios above 6000 cu/ft/bbl.

LEASE		T.D.	TEST RATE	PRODUCING		PERMITTED ALLOW.	BBLS/DAY
WELL			BBLS/DAY	GAS	OIL RATIO	BASED ON LATEST TEST	
Gilluly	A 4	24-20-S	12		24,333	9	
"	B 2	21-20-S	53		8605	27	
"	B 4	22-20-S	50		33647	7	
"	B 5	"	17		37081	6	

Proposed allowable transfer plan

Transfer Allow. from	Transfer Allow. to	Cu/ft. gas Conserved Day
Gilluly A 4	Gilluly A 9	215,388
Gilluly B 4	Gilluly B 2	175,294
Gilluly B 5	Gilluly B 2	170,856

OHIO OIL COMPANY
STATE HANSEN LEASE
MONUMENT

LEASE WELL	DAILY ALL. March, 1943	G.O.R.	TOTAL GAS CU/FT/DAY	GAS TRANSFERRED TO MO. 1 & 2	RATE OF TOTAL GAS CU/FT. /DAY	G.O.R. TESTS BBL/DAY	TOTAL GAS CU/FT. DAY
St. Hansen #1	40	370	14800	22	370	19240	
St. Hansen #2	41	370	15170	53	370	19610	
St. Hansen #4	24	9585	230040	Shut In			
Total gas			260,010				38850
			38,850				

Total saving of gas/day by trans. 221,160 cu/ft.

SUN OIL COMPANY
MONEY LEASE
MONUMENT

Maveety #5 daily allowable 23 bbl. Gas oil ratio October, 1942 = 50,500

LEASE WELL	DAILY ALLOW. APRIL-1943	G.O.R.	TOTAL GAS PER DAY	DAILY ALLOW. 4/43 (Inc. per. #5 allow.	G.O.R.	TOTAL GAS PER DAY
Maveety #3	31	3823	118,513 cu/ft.	12	3823	160,366 cu/ft.
Maveety #4	31	4138	128,278 "	43	4138	177,934 "
Maveety #5	23	50,500	1,161,500 "	Trans. to 3 & 4	S.I.	—
Daily total gas from 3, 4 & 5 =			1,069,791 "	Daily total gas from 3 & 4 (includes allow. from #5)		338,500 cu/ft.
Total daily gas savings			338,500 " 1,069,791 "			

12 bbl. per day transferred from #5 to #4.
11 bbl. per day transferred from #5 to #3

8/3

The New Mexico Federal Unit (a name used for convenience to describe an operation conducted by Continental Oil Company for itself and the other joint owners, Stanolind Oil and Gas Company, Standard Oil Company of Texas and Atlantic Refining Company, of certain Federal leases in Lea County) supervises the operation of 225 wells and considerable undeveloped acreage. The N. M. F. U. recommends the enactment and enforcement of stringent rules and regulations for the conservation of oil and gas in New Mexico and suggests the following procedure:

(a) The establishment of a reasonable gas oil ratio limit for each pool.
(b) The penalizing of the allowable of each well exceeding that limit so that no well be permitted to produce more gas than an amount equal to the normal oil allowable multiplied by such gas oil ratio limit.
(c) That no exceptions from this procedure be granted, regardless of supposedly peculiar conditions affecting any particular well or operation.
(d) That accurate gas oil ratio measurements be made at periodic intervals and that sworn reports be required from the operators through the U. S. mails.
(e) That state authorities test a sufficient number of wells to insure reasonably accurate reports and enable them to detect inequities.
(f) That consideration be given to a production unit plan in those cases where additional conservation may be achieved by the use of such a plan, but that the tentative or final application of such plan be not permitted to alter the procedure here suggested or delay putting it into effect.

The New Mexico Federal Unit (a name used for convenience to describe an operation conducted by Continental Oil Company for itself and the other joint owners, Stanolind Oil and Gas Company, Standard Oil Company of Texas and Atlantic Refining Company, of certain Federal leases in Lea County) supervises the operation of 225 wells and considerable undeveloped acreage. The N. M. F. U. recommends the enactment and enforcement of stringent rules and regulations for the conservation of oil and gas in New Mexico and suggests the following procedure:

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(f) That consideration be given to a production unit plan in those cases where additional conservation may be achieved by the use of such a plan, but that the tentative or final application of such plan be not permitted to alter the procedure here suggested or delay putting it into effect.

6/25/43

TO ALL OPERATORS:

Attached to this report and made a part thereof will be found data in connection with the transfer of allowable from high gas-oil ratio wells to low gas-oil ratio wells on the same basic leases.

The data is necessarily incomplete, due to the lack of time allocated for the tests. It is felt, however, that the results herewith presented may be indicative of that which can be expected from more extensive tests.

Glenn Staley

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PAGES 1- 6 Report of Committee Number One: Adoption of a permanent gas-oil ratio order with changes after study of suggested limiting ratios for various fields.

PAGES 7-12D Report of Committee Number two and Report of Committees No. 1 & No. 2 Combined: A presentation of data relative remedial work in fields nearing depletion in Lea County, New Mexico (Graphs opposite pages 8 and 12D.

PAGES 13-58 Report of Committee Number Three: Studying and proposing a definite plan for transfer of allowable oil from high gas-oil units to units with low gas-oil ratios on the same basic lease.

MINUTES OF SUB-ADVISORY & ENGINEERING ADVISORY COMMITTEES
Midland, Texas
December 24-1942

A special meeting of the Sub-Advisory and Engineering Advisory Committees of the Lea County Operators Committee was held in Midland, Texas, November 24 at the Scharbauer Hotel at 10 A.M. The following men were present:

Edgar Kraus	Atlantic Rfg. Co.	Carlsbad, N.M.
G.H. Card	Stanolind Oil & Gas Co.	Ft. Worth, Texas
G.H. Gray	Repollo Oil Co.	Midland, Texas
M.E. Berg	Tidewater Assoc. Oil Co.	"
N.B. Larsh	Repollo Oil Co.	"
D.H. Jordan	Atlantic Rfg. Co.	"
J.H. Moore	Shell Oil Co., Inc.	Hobbs, N.M.
J.T. House	Humble Oil & Rfg. Co.	Midland, Texas
T.D. Mitchell	Gulf Oil Corp.	Hobbs, N.M.
E.K. Davis	El Paso Natural Gas Co.	Jal, N.M.
R.S. Dewey	Humble Oil & Rfg. Co.	Midland, Texas
P.D. Grossman, Jr.	The Texas Co.	"
R.M. O'Neill	Phillips Pet. Co.	Odessa, Texas
H.L. Johnston	Continental Oil Co.	Ft. Worth, Texas
H.J. Kemler	Shell Oil Co., Inc.	Midland, Texas
J.R. Dunlavey	Skelly Oil Co.	Hobbs, N.M.
James Fitzgerald, Jr.	Skelly Oil Co.	Midland, Texas
L.F. Shiplet	The Texas Co.	"
A.F. Killig	"	Ft. Worth, Texas
Ed Warren	Carl B. King	Midland, Texas
R.N. Deax	Amerada Pet. Corp.	"

Mr. E.A. Kahlstrom of the Goldsmith Pool Engineering Committee explained in detail the "Goldsmith Plan" of transferring allowables from high gas-oil ratio wells to low ratio wells. Mr. Kahlstrom pointed out that the plan has worked very successfully; much more so than a lot of repair jobs that were tried. This plan was discussed with the idea of trying it in some of the fields south of Hobbs in Lea County and Monument being especially considered. A committee of five men was appointed to study the problem of the high gas-oil ratio situation in Lea County Fields, and if possible, present suggestions as to how the situation might be remedied. This committee was asked to report back to the meeting later in the afternoon; members of this committee are:

R.S. Dewey — Edgar Kraus — T.D. Mitchell
J.H. Moore — A.F. Killig

The report of the committee was as follows:

1. Recommend adoptions of permanent gas-oil ratio order with changes, after study, of suggested limiting ratios for various fields.
   a. Such order to provide for no exceptions.
2. Prepare material for presentation supporting contention that no beneficial action is practicable in older fields nearing depletion.
3. Proposal A. Ask for permission to use transfer of allowable plan in one field in Lea County on experimental basis for one year. After brief study, a specific plan be presented indicating desirable transfers and conditions under which experiment should be made.

Mr. A.M. McCorkle
Chairman Lea County Operators Committee
Stanolind Oil & Gas Co.
Ft. Worth, Texas

Dear Sir:

Submitted herewith is a compilation of reports by the Committees listed below which were appointed at a meeting of the Sub-Advisory Executive Committee and the Engineering Advisory Committee at Midland November 24, 1942; also reports by the Committee appointed on January 26, 1943 by the Lea County Operators Committee to work out, from an engineering standpoint, reasons for all-limiting gas-oil ratios in excess of 2000 cu/ft. per barrel for various fields of Lea County.

Committee No. 1 — Ken Davis - El Paso Natural Gas Co.
P.D. Grossman, Jr. - The Texas Co.
Ed Keeler - Continental Oil Co.
Assignment: To study a permanent gas-oil ratio order and give suggested limiting gas-oil ratios for the various fields of Lea County.

Committee No. 2 — C.F. Killer - Lea County Operators Committee
T.D. Mitchell - Gulf Oil Co.
G.H. Gray - Repollo Oil Co.
Assignment: To prepare material supporting the contention that no beneficial action (from remedial work) is practicable in the older fields of Lea County, which are nearing depletion.

Committee No. 3 — Don Topper - Amerada Petroleum Corp.
L.L. Gray - Gulf Oil Corp.
R.M. O'Neill - Phillips Pet. Co.
S.W. McCollum - Continental Oil Co.
R.S. Dewey - Humble Oil & Rfg. Co.
Assignment: To submit a definite plan indicating the effect of using a transfer of allowable plan in Monument and Eunice Fields.

Committee No 1 & 2 combined: Kenneth Davis - El Paso Natural Gas Co.
George Gray - Repollo Oil Co.
T.D. Mitchell - Gulf Oil Corp.
P.D. Grossman Jr. - The Texas Co.
C.F. Killer - Lea County Operators Committee
Assignment: To work out, from an engineering standpoint, reasons for all limiting gas-oil ratios in excess of 2000 cu/ft. per barrel of oil for the various fields of Lea County not covered by committees previously named.

The various reports present considerable detailed information. Of especial interest are the following:

A suggested gas-oil ratio order is presented by Committee No. 1 which recommends revised maximum limiting ratios for the fields of Lea County, the principal changes from present values being several reductions. No provision has been made in the suggested order for the granting of exceptions to it.

Considerable pertinent data is presented by Committee No. 2 supporting the contention that certain fields of Lea County nearing depletion cannot be materially or economically benefited by remedial work or the imposition of drastic gas-oil ratios, limitations which would result in greatly curtailed production.

Mr. A.M. McCorale
Centrum Lea County Operators' Committee
Stanolind Oil & Gas Co.
Ft. North, Texas

Dear Sir:

Submitted herewith is a compilation of reports by the committees listed below which were appointed at a meeting of the Subadvisory Executive Committee and the Engineering Advisory Committee at Midland, November 24:

Committee No. 1: Ken Davis- El Paso Natural Gas Co.
P.D. Grossman - The Texas Co.
Ed Keeler - Continental Oil Co.
To study a permanent gas-oil ratio order and give suggested limiting gas-oil ratios for the various fields of Lea County.

Committee No. 2: C.F. Killer - Lea County Operators Committee
T.D. Mitchell - Gulf Oil Corp.
G.H. Gray - Repollo Oil Co.
Which was appointed to prepare material supporting the contention that no beneficial action is practicable in the older fields of Lea County which are nearing depletion.

Committee No. 3: Don Topper - Amerada Pet. Corp.
L.L. Gray - Gulf Oil Corp.
Representative - Phillips Pet. Co.
S.W. McCollum - Continental Oil Co.
R.S. Dewey - Humble Oil & Rfg. Co.
Which, after study, was to submit a definite plan indicating the effect of using a transfer of allowable plan in Monument and Eunice Pools.

The various reports present considerable detailed information. Of especial interest are the following:

A suggested gas-oil ratio order is presented which recommends revised maximum limiting ratios for the fields of Lea County, the principal changes from present values being several reductions. No provision has been made in the suggested order for the granting of exceptions to it.

Considerable pertinent data is presented supporting the contention that certain fields of Lea County nearing depletion cannot be materially or economically benefited by remedial work or the imposition of drastic gas-oil ratios, limitations which would result in greatly curtailed production.

The report indicates that 12,738,000 cubic feet per day would be saved in Monument and Eunice alone if exemptions of the present gas-oil ratio order in those fields were cancelled. This figure cannot be taken as absolutely accurate but is a general approximation.

The report also analyzes the effect of a possible "transfer of allowable plan" covering Monument and Eunice, whereby the allowables from high ratio wells would be transferred to lower ratio wells on units not exceeding 320 acres in size, and under

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PAGES 1- 6 Report of Committee Number One: Adoption of a permanent gas-oil ratio order with changes after study of suggested limiting ratios for various fields.

PAGES 7-12 Report of Committee Number two: A presentation of data relative remedial work in fields nearing depletion in Lea County, New Mexico (Graphs opposite page 8)

PAGES 13-58 Report of Committee Number Three: Studying and proposing a definite plan for transfer of allowable oil from high gas-oil units to units with low gas-oil ratios on the same basic lease.

2

(Testing Procedure)

All operating gas-oil ratio tests shall be taken by or under the supervision of the New Mexico Oil Conservation Commission hereinafter designated as "The Commission".

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The operator shall: Upon request of the Deputy of the Commission, (a) equip each well to make conveniently a gas-oil ratio test; (b) furnish the Deputy of the Commission a complete list of his wells showing the type and dimensions of metering equipment best adapted for accurate gas measurement in accordance with rules contained herein; (c) furnish sufficient and qualified lease labor to install and manipulate all lease equipment in preparation for and during gas-oil ratio tests conducted in accordance with this order.

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3. Official Witness

The official witness shall take such action as may be necessary to accomplish the desired purpose.

4. Manner of Testing

(a) The flow period shall be 48 hours, except as hereinafter stated. The first 24 hours shall be the stabilization period and the last 24 hours shall be the period during which the well is tested.
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(d) In case of a stio-cooked well, the oil and gas shall be measured for the time it is produced.
(e) For gas lift or jetted wells the total volume of gas to be used in computing the operating gas/oil ratio is the total output volume minus the total input volume.

4. Manner of Testing

(c) The flow period shall be 48 hours, except as hereinafter stated. The first 24 hours shall be the stabilization period and the last 24 hours shall be the period during which the well is tested.
(b) Oil shall be gauged at the beginning and ending of each 24 hour period and gas shall be measured during the period wherein the well is tested. No change in the rate of flow shall be made during the last 36 hours of the 48 hour flow period and said flow shall approach as nearly as possible the unadjusted current allowable rate.
(c) Should an operator elect to flow a well at a rate less than the unadjusted current allowable then, and in that event, the rate of flow for proration purpose on said wells shall not exceed the rate at which the gas-oil ratio test was made.
(d) In case of a stio-cooked well, the oil and gas shall be measured for the time it is produced.
(e) For gas lift or jetted wells the total volume of gas to be used in computing the operating gas/oil ratio is the total output volume minus the total input volume.

5. Liquid Measurements

(a) All tanks shall be gauged and total volume of fluids determined according to accepted oil field practice.
(b) The net volume of oil shall be the total volume of fluid less the volume of B.S.&W.
(c) Fluid level in the separator must be maintained relatively constant so that the oil dump valve is covered at all times by at least 12 inches of liquid.

3

[illegible] at least 12 inches of liquid.
(d) If it is necessary to use a flowtank for the separation of water the water-oil level must be the same at the beginning and end of the test.

6. Gas Measurement

(a) A pressure gauge shall be installed on each separator and readings taken periodically. In the event the operator chooses to conduct the test at a separator pressure in excess of 100 pounds a recording pressure gauge shall be installed on the separator and the measured gas shall be increased by the measured or calculated volume going to the tanks. Calculated volume shall be based on the gas-pseudoliquid versus pressure curves for the field or area in which the well is located.
(b) For computing the volume of all gas produced the following standards shall be used: Pressure - 10 ounces above an atmospheric pressure of 14.4 pounds per square inch; temperature - 60 degrees Fahrenheit; specific gravity - 0.65 as compared to air. In case the gas measurement is made at a pressure in excess of 100 pounds, the measurements shall be adjusted in accordance to deviation from Boyles Law. The gas volumes shall be computed in cubic feet and gas-oil ratios in cubic feet per barrel of oil.
(c) Orifice well testers, orifice meters and side pressures test nipples are approved. Side pressure nipples shall be used only when it is necessary to measure volumes larger than can conveniently be measured by orifice meters. A standard set of tables for each device will be on file in the office of the Deputy of the Commission.

7. Any well that cannot be tested under the preceding rules shall be referred to the Commission for special consideration and rules.

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(c) In the Hobbs and Monument Pools the proration schedule shall be calculated in the normal manner according to the order of the Commission for that Field. Such unit having an allowable equal to or less than the average unit allowable for the pool, shall be allowed to produce an amount of gas equal to the product of the permitted maximum gas/oil ratio of the pool multiplied by the average unit allowable; provided that a unit, the oil allowable of which has been adjusted because of high gas-oil ratio, shall not exceed its adjusted allowable.

Any unit having an allowable greater than the average unit allowable for that field shall be allowed to produce only that amount of gas determined by the product of the permitted maximum gas-oil ratio and its adjusted oil allowable. From the pool allowable shall be deducted the amount of gas allocated to marginal units and the adjusted fields gas oil ratio. The remaining oil shall be distributed to the remaining unadjusted wells in accordance with the pool proration plan.

(15) The method of applying penalties for high-gas oil ratio units shall be as follows:
(a) Any oil producing unit with a net gas-oil ratio in excess of the permissible maximum for the field in which it is located shall be allowed no more than that amount of oil obtained from the following formula:

Penalized Allowable = Maximum Permissible GOR X Unit Top Allowable: Oil
GOR of Unit — Production for Field

The use of this formula results in penalizing on a method of volumetric control where all units in one particular field are allowed to produce an equal quantity of gas.
(b) A marginal unit shall be permitted to produce the same total volume of oil which it would be permitted to produce, if it were a non-marginal unit.

16. Legal overage and shortage shall be handled as in the past. That is, the adjusted oil allowable shall be the current oil allowable plus approved shortage or the current allowable less the overage, whichever applies in the particular case.

In order to encourage repressuring or the maintenance of reservoir pressure, the volume of gas injected into the reservoir may be deducted from the gaugue gas in determining the net gas-oil ratio. The mechanics of carrying this section shall be determined after a public hearing before the Commission.

17. Upon remedial work has been completed on a unit, an adjusted allowable, calculated on the basis of the prescribed gas-oil ratio test and subsequent to such remedial work, shall be granted from the date of reporting such work, for a period not exceeding 60 days.

18. Units designated by the Commission as predominately gas shall be exempt from gas-oil ratio adjustments. Provided, however, that no unit shall be allowed to produce more oil than the average top allowable of a unit for the county in which it is located.

A PRESENTATION OF DATA RELATIVE FUTURE REMEDIAL WORK IN FIELDS NEARING DEPLETION IN LEA COUNTY, NEW MEXICO

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Fields in Lea County New Mexico which are, within this report, considered to have made the nearest approach of any to depletion are:

1. Sand Pay types
   a. Hardy
   b. Mattix
   c. Penrose
   d. Skelly
2. Dolomitic limestone pay type
   a. Cooper
   b. Jal
   c. Lynn

Monthly production decline curves which show the calculated average field decline for the Hardy Field (Graph A-1); the Mattix Field (Graph A-2); the Penrose Field (Graph A-3) and the Skelly Field (Graph A-4) reflect the future recoverable oil (depleted to a monthly rate of 90 barrels) from these fields. The figures obtained are as follows:

FIELD	FUTURE RECOVERABLE OIL PER ACRE (BBL)	FUTURE RECOVERABLE OIL PER 40 ACRES
Hardy	163	6520 bbls.
Mattix	216	8640
Penrose	158	6320
Skelly	346	13840

Average per acre recovery for each of the above listed fields, and its age as of July 1, 1942 is as follows:

FIELD	PER ACRE RECOVERY TO 7-1-42	AGE OF FIELD AS OF 7-1-42
Hardy	882 bbls.	43 yrs.
Mattix	1055 "	7 "
Penrose	774 "	64 "
Skelly	883 "	61 "

The calculated ultimate recovery from these fields, based upon the foregoing tabulations is as follows:

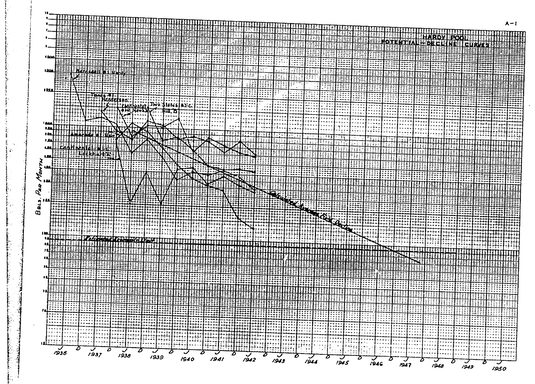
FIELD	TOTAL PER ACRE RECOVERY
Hardy	1045 bbls.
Mattix	1271 "
Penrose	1132 "
Skelly	1229 "

Although reservoir pressure data on the above listed fields is not as complete as can be desired, that which is available shows an average decline of 900 pounds to date with an average reservoir pressure of 500 pounds remaining.

Reservoir conditions within the Mattix Field are believed to be representative of those in the other three sand fields being considered. Therefore, a condition within the field can be accepted for the others.

Calculations show that within the Mattix Field 83 percent of ultimate oil recovery has been obtained with 68 percent of the effective reservoir pressure drop.

Production - Gas-oil ratio curves of the Hardy Field (Graph C-1), the Mattix Field (Graph C-2), the Penrose Field (Graph C-3) and the Skelly Field (Graph C-4) show, with exception of the Skelly Field, a definite downward trend in the total volume of gas being produced although gas-oil ratios are increasing. Such condition suggests a much more rapid depletion of oil than gas and when considered in light of the fact that, as stated above, 83 percent of the ultimate oil recovery has been made with 68 percent of the effective reservoir pressure, it leads to the question as to whether or not the rate of gas production and corresponding reservoir pressure drop will materially affect ultimate recovery of oil.



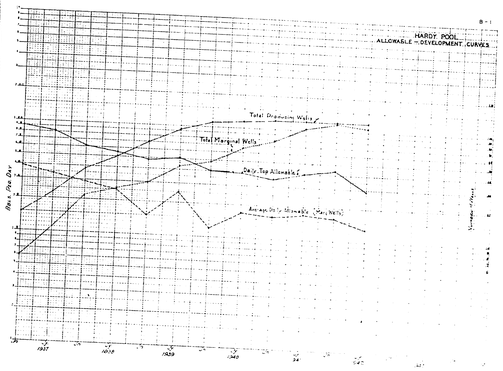


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EXHIBIT "B"

TESTING PROCEDURE

All operating gas-oil ratio tests shall be taken by or under the supervision of the New Mexico Oil Conservation Commission hereinafter designated as "The Commission".

1. Operator

The operator shall: Upon request of the Deputy of the Commission, (a) equip each well to make conveniently a gas-oil ratio test; (b) furnish the Deputy of the Commission a complete list of his wells showing the type and dimensions of metering equipment best adapted for accurate gas measurement in accordance with rules contained herein; (c) furnish sufficient and qualified lease labor to install and manipulate all lease equipment in preparation for and during gas-oil ratio tests conducted in accordance with this order.

2. The Commission

The Commission shall: (a) Assemble the information supplied by the operators as recommended above, and arrange test schedules; (b) assign engineers to make tests and act as official witnesses. Only in the event of an emergency shall company engineers be used as official witnesses. (c) Instruct all personnel in the proper operation of measuring equipment and procedure in conducting the tests; (d) calibrate all metering equipment; (e) furnish, calculate, record and file all gas measurement charts and records; (f) compute all gas-oil ratios.

3. Official Witness

The official witness shall take such action as may be necessary to accomplish the desired purpose.

4. Manner of Testing

(a) The flow period shall be 48 hours, except as hereinafter stated. The first 24 hours shall be the stabilization period and the last 24 hours shall be the period during which the well is tested.

(b) Oil shall be gauged at the beginning and ending of each 24 hour period and gas shall be measured during the period wherein the well is tested. No change in the rate of flow shall be made during the last 36 hours of the 48 hour flow period and said flow shall approach as nearly as possible the unadjusted current allowable rate.

(c) Should an operator elect to flow a well at a rate less than the unadjusted current allowable then, and in that event, the rate of flow for proration purpose on said wells shall not exceed the rate at which the gas-oil ratio test was made.

(d) In case of a stic-cooked well, the oil and gas shall be measured for the time it is produced.

(e) For gas lift or jetted wells the total volume of gas to be used in computing the operating gas/oil ratio is the total output volume minus the total input volume.

5. Liquid Measurement

(a) All tanks shall be gauged and total volume of fluids determined according to accepted oil field practice.

(b) The net volume of oil shall be the total volume of fluid less the volume of B.S.&W.

(c) Fluid level in the separator must be maintained relatively constant so that the oil dump valve is covered at all times by at least 12 inches of liquid.

(d) If it is necessary to use a flowtank for the separation of water the water-oil level must be the same at the beginning and end of the test.

6. Gas Measurement

(a) A pressure gauge shall be installed on each separator and readings taken periodically. In the event the operator chooses to conduct the test at a separator pressure in excess of 100 pounds a recording pressure gauge shall be installed on the separator and the measured gas shall be increased by the measured or calculated volume going to the tanks. Calculated volume shall be based on the gas-solubility versus pressure curves for the field or area in which the well is located.

(b) For computing the volume of all gas produced the following standards shall be used: Pressure - 10 ounces above an atmospheric pressure of 14.4 pounds per square inch; temperature - 60 degrees Fahrenheit; specific gravity - 0.85 as compared to air. In case the gas measurement is made at a pressure in excess of 100 pounds, the measurements shall be adjusted in accordance to deviation from Boyles Law. The gas volumes shall be computed in cubic feet and gas-oil ratios in cubic feet per barrel of oil.

(c) Orifice well testers, orifice meters and side pressures test nipples are approved. Side pressure nipples shall be used only when it is necessary to measure volumes larger than can conveniently be measured by orifice meters. A standard set of tables for each device will be on file in the office of the Deputy of the Commission.

7. Any well that cannot be tested under the preceding rules shall be referred to the Commission for special consideration and rules.

Exhibit C

GULF OIL CORPORATION
BELL RANCH LEASE
MONROE

	Total allow. 12-19-42 to 3-4-43	O.G.R.	TOTAL GAS	Total prod. 12-19-42 to 3-4-43	O.G.R.	TOTAL GAS
Bell Ranney #7	2984 bbl.	1910	5,661,240 cu/ft.	4199 bbl.	1910	7,943,690
Bell Ranney #8	1540 bbl.	*1000	1,617,590 cu/ft.	Shut in		

* = assumed allowable of 20 bbl/day

Production from #7 for period 12-1-42 to 3-4-43 over and above its normal daily allowable = 1195 bbl.

Production of 1195 bbl. from #7 transferred to #8

O.G.R. #8 (108,977) x 1195 bbl. = 130,239,215 cu/ft. gas

O.G.R. #7 (1910) x 1195 bbl. = 2,282,450 cu/ft. gas

Saving in gas by transfer of oil: 127,957,765 cu/ft. gas - 1,660,000 cu/ft. gas/day

Allowable from #8 transferred to #7 3-4-43 to 4-1-43 but #7 produced only 1,219 bbl. of oil during this period, or 10 bbl. in excess of its own allowable.

STANOLIND OIL & GAS COMPANY
MONROE

Production and allowable transfer data from high to low ratio wells.
Wells with producing ratios below 7000 cu/ft/bbl.

LEASE WELL	S.T.R.	TEST RATE BBLS/DAY	PRODUCING GAS OIL RATIO
Gilluly A 3	25-20-36	68	1593
" A 5	"	53	6268
" A 6	"	48	1313
" A 8	24-20-36	74	4779
" A 10	"	47	1838
" A 11	"	14	6348
" A 13	"	24	2031
" A 14	"	67	3321

Wells with producing gas oil ratios above 7000 cu/ft/bbl.

LEASE WELL	S.T.R.	TEST RATE BBLS/DAY	PRODUCING GAS OIL RATIO	PENALIZED ALL. BBLS/DAY BASED ON LATEST TEST.
Gilluly A 7	24-20-36	19	36798	7

Proposed transfer allowable plan

Transfer allowable from	Transfer Allowable To	Cu/ft. gas Conserved/day
Gilluly A 7	Gilluly A 14	243339

MONUMENT

Production and allowable transfer data from high to low ratio wells
Wells with producing ratios below 6000 cu/ft/bbl

LEASE WELL	S.T.R.	TEST RATE BBLS/DAY	PRODUCING GAS OIL RATIO
Gilluly A 2	24-20-36	111	853
" A 9	"	113	403
" A 12	"	63	663

The New Mexico Federal Unit (a name used for convenience to describe an operation conducted by Continental Oil Company for itself and the other joint owners, Stanolind Oil and Gas Company, Standard Oil Company of Texas and Atlantic Refining Company, of certain Federal leases in Lea County) supervises the operation of 225 wells and considerable undeveloped acreage. The N. M. F. U. recommends the enactment and enforcement of stringent rules and regulations for the conservation of oil and gas in New Mexico and suggests the following procedure:

(a) The establishment of a reasonable gas oil ratio limit for each pool.

(b) The penalizing of the allowable of each well exceeding that limit so that no well be permitted to produce more gas than an amount equal to the normal oil allowable multiplied by such gas oil ratio limit.

(c) That no exceptions from this procedure be granted, regardless of supposedly peculiar conditions affecting any particular well or operation.

(d) That accurate gas oil ratio measurements be made at periodic intervals and that sworn reports be required from the operators through the U. S. mails.

(e) That state authorities test a sufficient number of wells to insure reasonably accurate reports and enable them to detect inequities.

(f) That consideration be given to a production unit plan in those cases where additional conservation may be achieved by the use of such a plan, but that the tentative or final application of such plan be not permitted to alter the procedure here suggested or delay putting it into effect.

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6/25
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TO ALL OPERATORS:

Attached to this report and made a part thereof will be found data in connection with the transfer of allowable from high gas-oil ratio wells to low gas-oil ratio wells on the same basic leases.

The data is necessarily incomplete, due to the lack of time allocated for the tests. It is felt, however, that the results herewith presented may be indicative of that which can be expected from more extensive tests.

Glenn Staley

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PAGES 1- 6 Report of Committee Number One: Adoption of a permanent gas-oil ratio order with changes after study of suggested limiting ratios for various fields.

PAGES 7-12 Report of Committee Number two and Report of Committees No. 1 & No. 2 Combined: A presentation of data relative remedial work in fields nearing depletion in Lea County, New Mexico (Graphs opposite pages 8 and 12).

PAGES 13-58 Report of Committee Number Three: Studying and proposing a definite plan for transfer of allowable oil from high gas-oil units to units with low gas-oil ratios on the same basic lease.

Proposal B. By using a stringent gas-oil ratio penalty on true displacement basis with no exceptions, no further transfer of allowables would be needed.

4. All studies mentioned above be expedited with a view of having a hearing before January 1, 1943.

Each recommendation was discussed separately and voted upon in that same manner. Results of such vote are as follows:

No. 1. Recommendation carried.
No. 2. Recommendation carried.
No. 3. Proposal A. Recommendation carried; 6 vote yes; 1 no. Vote
Proposal B. By using a stringent gas-oil ratio penalty on true displacement basis with no exceptions, no further transfer of allowables would be needed.

4. All studies mentioned above be expedited with a view of having a hearing before January 1, 1943.

Each recommendation was discussed separately and voted upon in that same manner. Results of such vote are as follows:

No. 1. Recommendation carried.
No. 2. Recommendation carried.
No. 3. Proposal A. Recommendation carried; 6 vote yes; 1 no. Vote held as to whether to use one field only (Eunice) as experimental field or Eunice and Monument. Vote carried 5 to 2 in favor of Eunice and Monument.

A committee consisting of the following was appointed to study Recommendation No. 1:

Ken Davis - El Paso Natural Gas Co.
F.D. Grommon - The Texas Co.
Ed Keeler - Continental Oil Co.

A committee consisting of the following was appointed to study Recommendation No. 2:

C.F. Miller - Lea County Operators Committee
R.D. Mitchell - Gulf Oil Corp.
G.R. Gray - Repollo Oil Co.

A committee was then appointed for studying and proposing the experimental work to be done in the Eunice and Monument Fields with regard to transfer of allowable from high gas-oil ratio cells to low gas-oil ratio wells. Members of this committee are as follows:

Don Topper - Amerada Pet. Corp.
L.L. Gray - Gulf Oil Corp.
Representative - Phillips Pet. Co.
S.V. McCollom - Continental Oil Co.
R.S. Dewey - Humble Oil & Ref. Co.

It was decided that these committees would meet in Hobbs in the near future, after which their report would be sent to Mr. A.M. DeCorkle, Chairman of the Executive Committee of the Lea County operators, who, in turn would submit the information to the members of the Executive Committee. This Committee will then petition the Oil Conservation Commission for a hearing on the matter. It has been suggested that this hearing be held in Santa Fe on December 17, if possible. An operators meeting will be held December 16 in Santa Fe.

The question was brought up of using gasoline plant figures on Operators Monthly Report of Operations C-115 instead of company figures. Mr. Willig of The Texas Company made a motion that the group present recommend that the operators be notified of the conditions and ask for their cooperation in making their gas figures coincide with figures they receive from the gasoline plant; that they adopt that method of reporting gas-oil ratios on form C-115. Motion was seconded by Mr. Moore and carried.

N.J. Gesher
SUB-ADVISORY COMMITTEE
Glenn Staley
ENGINEERING ADVISORY COM.

The report of Committee No. 2 indicates that 12,738,000 cubic feet per day would be saved in Monument and Eunice alone if exceptions of the present gas-oil ratio order in those fields were cancelled. This figure cannot be taken as absolutely accurate but is a general approximation.

The report also analyzes the effect of a possible "transfer of allowable plan" covering Monument and Eunice, whereby the allowables from high ratio wells would be transferred to lower ratio wells on units not exceeding 320 acres in size, and under the same basic lease. In the plan as worked out, the intention is to transfer the total unpenalized allowable rather than any percentage of it. Under these conditions, it is estimated that there would be a saving at Monument of 5,217,000 cubic feet per day and at Eunice of 11,349,322 cubic feet per day.

Maps have been prepared graphically giving information concerning the distribution of water wells, marginal wells, one and two unit leases and the location of the high gas-oil ratio wells. Because of the nature of the exhibits, they cannot be readily duplicated but will be made available at any of the operators' meetings and hearings which may be held.

Engineering studies are going forward on three "transfer of allowable" experimental projects, one at Monument and two at Eunice, and data will be available before the time of the proposed hearing on both of these.

Glenn Staley,
Chairman

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Engineering studies are going forward on two "transfer of allowable" experimental projects, one each at Monument and Eunice, and data will be available before the time of the proposed hearing on both of these.

Glenn Staley,
Chairman

INDEX

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1

At a special meeting of the Sub-Advisory and Engineering Advisory Committees of the Lea County Operators Committee held at Midland, Texas on November 24, certain committees were appointed to study various recommendations made at this meeting. One of these committees, composed of W.C. Davis of the El Paso Natural Gas Company, F.D. Grommon of the Texas Company, and E.F. Keeler of the Continental Oil Company, was instructed to study "the adoption of a permanent gas-oil ratio order with changes after study of suggested limiting ratios for various fields." The attached report consists of the recommendations made by this committee.

It was thought advisable to explain the methods used in arriving at the recommended maximum permissible gas-oil ratios for the various Lea County fields. In the case of the more prolific fields such as Hobbs, Monument, and Eunice the maximum ratios were established at a level whereby each field would have approximately the same percentage of high ratio wells. From ten to fifteen percent of the total number of wells in each of these fields will be above the recommended maximum permissible ratios.

In recommending maximum ratios for the sand fields it was found necessary to use a different method. In these fields a large percentage of wells with high ratios would not be penalized because of the small amount of oil they produce. Consequently the percentage of wells had to be considered that would actually be penalized rather than the number of high ratio wells. This system resulted in the setting of maximum permissible ratios in the sand fields that are below the average field ratio while in the better areas the maximum permissible ratios are higher than the field average. However, the percentage of penalized wells in all fields will be fairly constant.

In regard to these sand areas it might be noted that the maximum ratios as recommended by this committee are made with the idea that the present system of applying penalties on a gas withdrawal basis will be continued. The recommended ratios could not be used if this system of computing penalties is changed.

In the case of the Cooper and Jal fields the committee decided that they were unable to set a maximum gas-oil ratio that would be fairly adaptable to all wells in the field. As a result of this decision no maximum ratios were recommended.

The Cooper and Jal fields differ from most other fields in the county in that large quantities of water are produced from most of the wells. There are several wells in these fields that have gas-oil ratios from 20,000 to 30,000 and yet have gas-fluid ratios of less than 1,000. If such wells were penalized it would be necessary to shut them in as they could not be produced at a reduced rate.

In order to avoid this we would be forced to recommend a maximum gas-oil ratio of 30,000 or change to a gas-fluid ratio basis.

Both Jal and Cooper are old fields rapidly approaching depletion. Due to the active water drive the conservation of gas energy would not be as important as in other fields. The present problem is to enable continuous production from these wells as long as it is profitable. If a low maximum gas-oil ratio is applied to these fields a large percentage of wells will be shut in and most of the remaining recoverable oil will never be produced. Because of these conditions the committee recommends that no maximum gas-oil ratios be applied to these two fields.

The recommended changes in maximum permissible ratios for the various Lea County fields could be summed up as follows:

1. Two fields, Rhodes and Langlie had their maximum ratios increased.

2. Seven fields, Arrowhead, Eaves, Eunice, Hobbs, Monument, Penrose and Skelly had their maximum ratios reduced.

3. Two fields, Jal and Cooper had no limit set for maximum gas-oil ratios.

E.F. Keeler
W.C. Davis
F.D. Grommon

Lea County as follows:

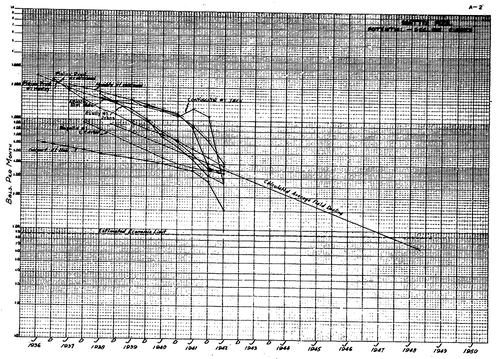
POOL OR AREA	MAXIMUM GAS-OIL RATIO
Arrowhead	2,500
Grayburg	3,000
Eaves	4,000
Eunice	6,000
Hobbs	3,000
Jalmat	5,000
Langlie	2,500
Lovington	8,000
Lynch	2,000
Monument	3,000
Penrose	4,000
Rhodes	7,000
Skelly	3,000
Vacuum	4,000
W. Jalmat	2,000
W. Lovington	4,000
Blinebry	2,000
Drinkard	4,000
Fowler	2,000
Grayburg	2,000
Langlie	2,000
Maljamar	2,000
Paddock	2,000
Tubb	2,000
Wantz (Abo)	2,000

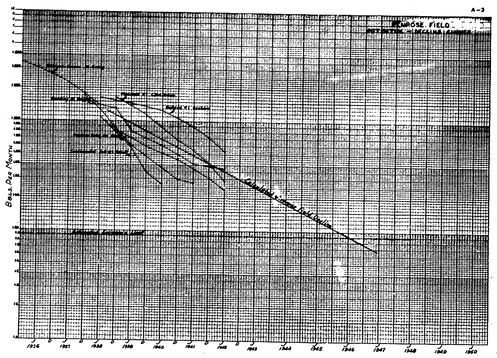
[illegible] shall be allowed [illegible] 2,000 cubic feet per [illegible] shall be tested [illegible] after [illegible] shall be [illegible] days after completion of ten [illegible] shall be [illegible] tested.

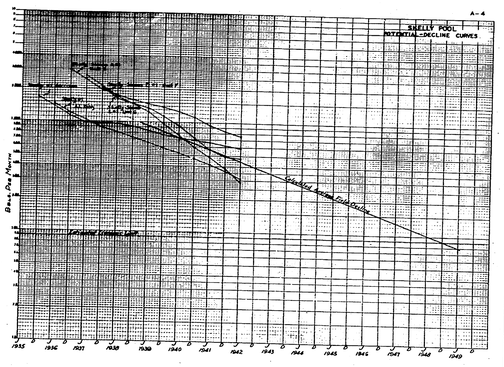
[illegible] shall be [illegible] as follows:

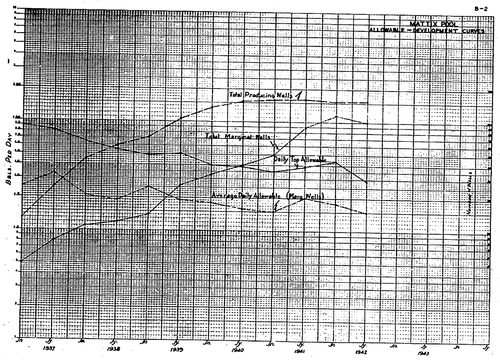
(a) [illegible] shall be [illegible] previous [illegible] December 1, 1943.

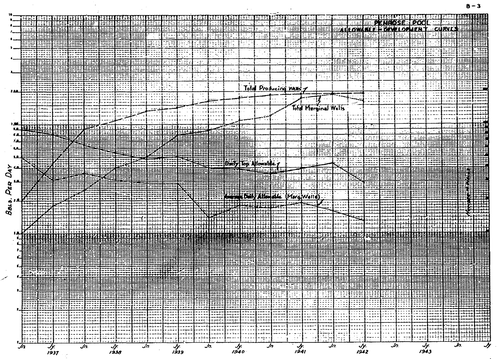
(b) [illegible] shall be [illegible] amount of [illegible] shall be [illegible] shall be [illegible] shall be

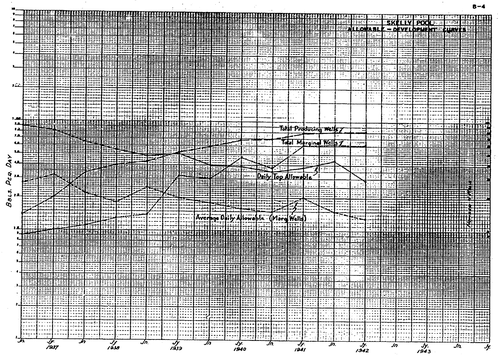

A-2
Bbls. Per Month

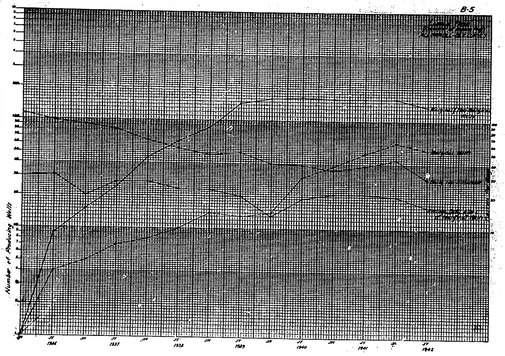

A-3
BEULAH FIELD
Bbls. Per Month

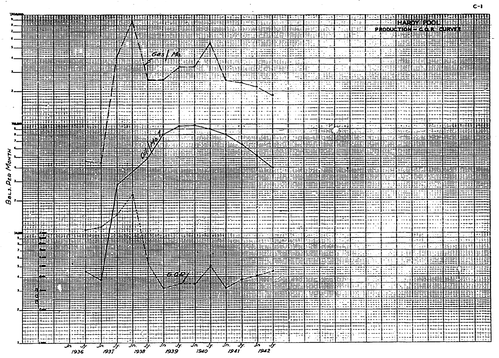

A-4
SKELLY POOL
POTENTIAL-DECLINE CURVES
Bbls. Per Month

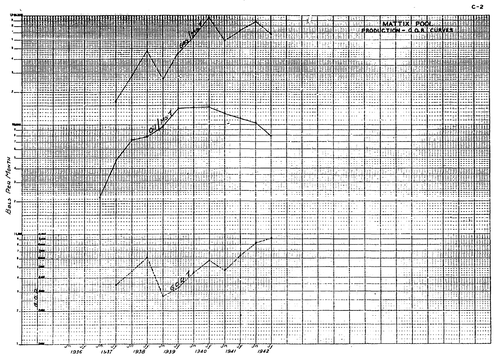

B-2
MATTIX POOL
ALLOWABLE - DEVELOPMENT CURVES
Total Producing Wells
Total Marginal Wells
Daily Top Allowable
Average Daily Allowable (Prog. Wells)
Bbls. Per Day

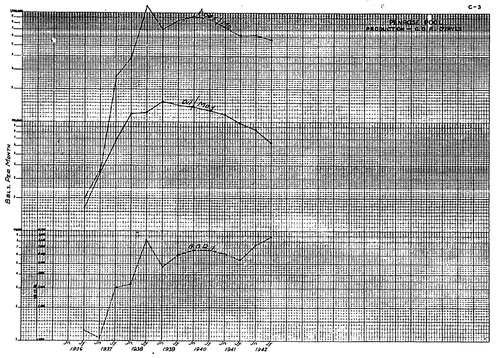

B-3
PENROSE POOL
ALLOWABLE - DEVELOPMENT CURVES
Total Producing Wells
Total Marginal Wells
Daily Top Allowable
Average Daily Allowable (Prog. Wells)
Bbls. Per Day

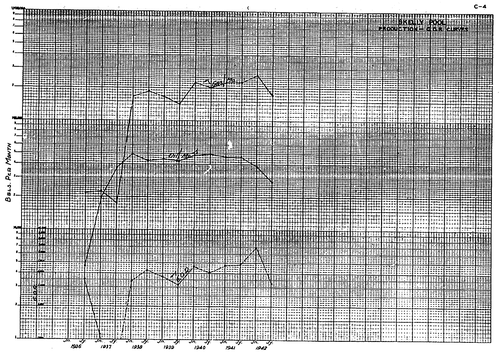

B-4
SKELLY POOL
ALLOWABLE - DEVELOPMENT CURVES
Total Producing Wells
Total Marginal Wells
Daily Top Allowable
Average Daily Allowable (Prog. Wells)
Bbls. Per Day

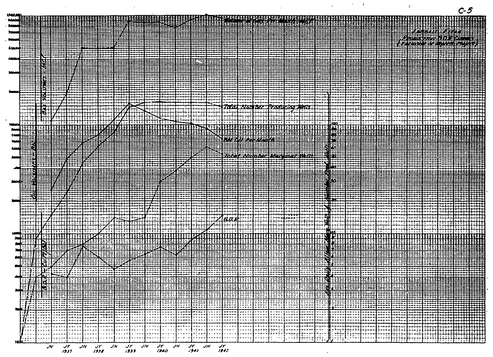

B-5
Number of Producing Wells

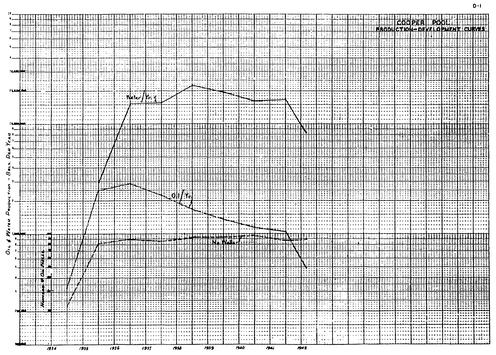

C-1
HOBBS POOL
PRODUCTION - G.O.R. CURVES
Gas / Mo.
Oil / Mo.
G.O.R.
Bbls. Per Month

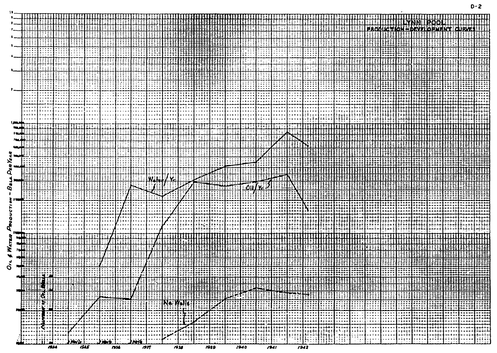

C-2
MATTIX POOL
PRODUCTION - G.O.R. CURVES
Gas / Mo.
Oil / Mo.
G.O.R.
Bbls. Per Month

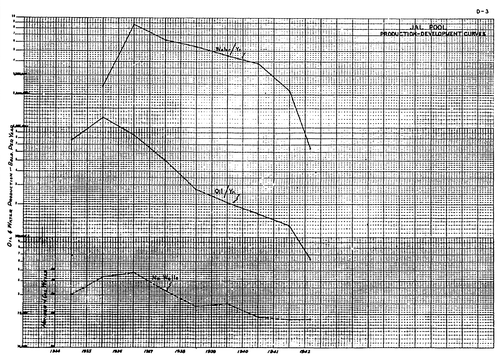

C-3
PENROSE POOL
PRODUCTION - G.O.R. CURVES
Gas / Mo.
Oil / Mo.
G.O.R.
Bbls. Per Month

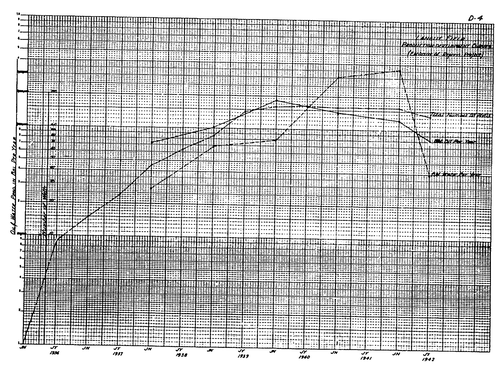

C-4
HOBBS POOL
PRODUCTION - G.O.R. CURVES
Gas / Mo.
Oil / Mo.
G.O.R.
Bbls. Per Month


C-5
Total Number Producing Wells
G.O.R.


D-1
COOPER POOL
PRODUCTION-DEVELOPMENT CURVES
Water / Yr.
Oil / Yr.
No. Wells


D-2
LYNN POOL
PRODUCTION-DEVELOPMENT CURVE
Water / Yr.
Oil / Yr.
No. Wells


D-3
JAL POOL
PRODUCTION-DEVELOPMENT CURVES
Water / Yr.
Oil / Yr.
No. Wells


D-4
BEULAH FIELD
PRODUCTION AND NUMBER CURVES

43

	COOPER			JAL			LYNN	
YEAR	NO. WELLS	WATER BBLS.	OIL BBLS.	NO. WELLS	WATER BBLS.	OIL BBLS.	NO. WELLS	WATER BBLS.	OIL BBLS.
1934	22	no rpt.	324710	30	no rpt.	775996	3	no rpt.	12635
1935	82	2901890	2495512	44	2403895	1222712	3	51537	26788
1936	89	15929776	2288008	48	8764043	855235	3	272460	25617
1937	86	15404466	2237933	33	6359118	499722	11	216763	101808
1938	93	22404787	1652178	24	5735869	271635	16	308936	295299
1939	93	19728658	1379726	25	4528287	207395	26	402528	271593
1940	97	16314650	1151977	19	3871676	164434	32	444523	299676
1941	87	16707986	1032739	18	2162822	129471	29	833554	347384
8 mo. 1942	89	8175415	496552	18	653958	63849	28	624013	169640
		116458927	13691315		34487648	4189609		3154340	1543440

Decline of water production in the Jal Field as shown on Graph D-3 coincides with abandonment of certain oil wells. Decline of oil production within the Jal and Cooper Fields, as shown on Graph D-3 and Graph D-1, coincides with a period of one year of courring with the greatest yearly increase of water.

Attempted remedial work in the three dolomitic limestone fields has often proven unsuccessful and ultimately led to complete abandonment. Both from a geologic study and results of remedial work it can be stated that oil, gas and water are so closely associated within a common reservoir that the segregation of one from the other has to very difficult and certainly economically unjustified.

Appended hereto will be found a partial list of remedial work performed in sand and dolomitic-limestone fields.

C.P. Miller
G.H. Gray
W.H. Mitchell

DISCUSSION OF SAND AREA REMEDIAL WORK

Examination of remedial work aimed at reducing gas-oil ratios in the sand areas revealed that:

1. The close association of the gas with oil in the gas expansion type reservoir in narrow producing zones has offered little or no chance for the successful application of mechanical separation methods.

2. A large percentage of the wells were shut heavily on completion to obtain production from the tight formation, therefore, mechanical control is impossible.

3. In general, the few jobs that have been effective or partially effective have only been temporarily so.

TYPICAL REMEDIAL RESULTS DOLOMITIC LIME FIELDS

COOPER

Phillips Pet. C.D. Woolworth #12 26-24-36
1941 T.D. 3325
Packer 3311 - after GL above packer 90 bbl water/hr
Packer 3264 - after GL above packer 54 bbls water/hr
Retainer 3237 and 100 sax cement. After swabbed dry
200 acid after - no oil, gas or water S.I.

Gulf Oil Corp. Am. Rasley #2 2-25S-36E
1941 Squeezed 150 sax below retainer @ 3411
Before:GL 25 oil; 10000 water
After pumped 10 oil; 10 water
3000 acid; pumped 21 oil; 120 water

Amerada Pet. Corp. Everett #2 34-24-36
1941 3350 PBTD
50 sax below retainer @ 3275
Before making 100% water
After swabbed dry - shut in and abandoned

Gulf Oil Corp. G.E. Cooper No. 1 11-21S-36E
Completed 5-9-35 Initial potential 1122 oil; no water
on 11-14-35 started making 100% water and died.
Perf. upper zone to obtain more gas and put on gas lift. Made 121 oil.
Present production 70 oil; 5400 water on gas lift.
If shut in the well must be flowed from one to two weeks before oil is obtained

JAL

Continental C. Shales B 13-25S-36E
Completed 2-26-33 Initially no water

5-6-33	3% water
5-11-33	20% "
10-8-33	25% "
10-13-33	35% "
12-7-33	50%+
12-31-33	75% "
1-6-34	80% "
1-19-34	80% "
3-25-34	PB 15 sax, 3370-3343
5-4-34	test 70 oil 30% water
5-21-34	PB 20 sax, 3343-3315
6-28-34	90 bbls. fluid; 100% water
	S.I. PB for gas well

LYNN

Shell Oil Co. Whitten No. 1 33-23S-36E
1940 packer @ 3276 reduced gas-oil ratio from 3100 to 731

LANGLIE FIELD

Surface boundaries of the Langlie Field have not been established in conformity with a variety of structural and depositional conditions within the area embraced. For example, several 40-acre units within the field are known to be producing oil from a dolomitic limestone section while others produce from sand bodies of various stratigraphic positions. Two distinct structural folds add to the complexity of problems within the field.

In order to avoid any undue confusion the Committee has deemed it advisable to exclude production data on approximately 520 acres which are included in a repressuring project within the Langlie Field.

A few observations which have been made from a study of the following data are herewith presented. It will be noted from a study of the Allowable Development Curve Graph B-5 that the field attained its maximum development about January, 1940. The average daily allowable of marginal wells, six months prior to this time had shown a pronounced decline as also had the average daily top allowable per well to a lesser degree. Immediately following this period the number of marginal wells increased sharply although the average daily allowable or potential of such wells increased only slight barrels. In as much as the daily top allowable per unit decreased some during this period while the average daily allowable of marginal wells increased only slightly it is evident that the reservoir from which the marginal wells were producing had no reserve and that such oil as remained was being rapidly withdrawn. Further evidence in support of this statement can be drawn from a study of the Production Gas-Oil Ratio Curve C-5.

The relative constant volume of gas produced per month from July, 1939 to present date, as shown on Graph C-5 when compared to the increase in gas-oil ratio for the same period might be interpreted as suggesting a decrease in the efficiency of the rate of flow except that at the same time this was occurring the total amount of oil being produced was on the decrease and the total number of marginal wells was on the increase. It is apparent that the reservoir was being voided of oil at a much greater rate than it was of gas.

Graph D-4 Production Development Curve, shows a rapid increase in the amount of water being produced after January, 1940. This fact is misleading in that it might be interpreted as reflecting a condition for the entire field where actually it is primarily the result of performance of only a few wells that produce from dolomitic limestone.

Structural and stratigraphic conditions which, in the Langlie Field, appear to be controlling factors in production problems, can perhaps best be described by the following quotation, namely, "the factors of structure and stratigraphy are heterogenous in their homogeneity". It is the opinion of the Committee that exceptions within the Langlie Field do not necessarily determine the rule. It believes, further, that in considering the field as a unit there is evidence of the existence of gas in the reservoir in quantities more than sufficient to produce the oil associated with it. The problem, therefore, resolves itself into one of surface rather than subsurface waste.

Much has been done in the past to deliver gas to a commercial market from the Langlie Field and assurance has been given that much more will be done in an effort to increase the deliveries as soon as necessary materials can be made available.

REPORT OF COMMITTEES 1 & 2

The Committee named herewith was appointed by the Lea County Engineering Committee on January 26, 1943 to work out, from an engineering standpoint, reasons for all limiting gas-oil ratios for the various fields of Lea County in excess of 2000 cubic feet per barrel of oil:

Kenneth Davis — P.D. Grocmon, Jr.
George Gray — Charles P. Miller
W.H. Mitchell

The Committee met in Hobbs on February 4, 1943 and again on February 15, 1943. It is composed of two former committees which were appointed by the State Advisory Engineering Committee, in Midland on December 22, 1942, to study problems relative limiting gas-oil ratios and possibility of beneficial action resulting from remedial work in fields nearing depletion. Findings of those committees are incorporated and enlarged in the report of the present Committee.

Determination of a direct mathematical solution to the problem of limiting ratios with the information at hand, has not appeared feasible. An approach to the problem, however, has been made through a study of present day reservoir conditions in the following major fields of Lea County: Hobbs, Monument, Eunice and South Eunice. Many of the Committee's conclusions are based upon evidence found in the attached graphs.

HOBBS

The Hobbs Field in December, 1942 possessed the same reservoir pressure as that which it showed in December, 1937 even though during this five year period the field had yielded 18,660,823 barrels of oil, 17,807,896 barrels of water and 35,233,059 MCF gas. It is the opinion of the Committee, therefore, that because the field has been able to maintain its reservoir pressure under present producing conditions there is no subsurface waste.

MONUMENT

The Monument Field has five years less production than the Hobbs Field and may, therefore, be expected to show slightly different reservoir conditions from those found in the Hobbs Field at the present time. The Monument Field had a calculated reservoir pressure of 1245 lbs. as of January 1, 1943. The total reservoir drop, from date of discovery, is therefore, calculated to have been 292 lbs. Forty-five pounds of the drop occurred between the dates of January 1, 1940 and January 1, 1943.

Total oil production between the date of discovery in 1935 and January 1, 1940 was 32,409,918 barrels. The reservoir pressure drop for the same period was 227 lbs. or at a rate of seven pounds per million barrels of oil produced. A total of 19,559,250 barrels of oil was produced between January 1, 1940 and January 1, 1943. Reservoir pressure drop during this period amounted to 45 lbs. and was at a rate of 2.303 lbs. per million barrels of oil produced. The productivity ratios between the two periods was, therefore, approximately one to three.

If it can be suggested that the future rate of reservoir decline in the Monument Field will be not greater than 2.303 lbs. per million barrels of oil and that the field will be producing oil when it has, for the sake of argument, reached a reservoir pressure of 600 lbs. then, on the basis of 19,720 productive acres and a future recovery of $\frac{6454}{2.303}$ x 1,000,000, we can expect a future recovery of 14,002 barrels per acre. In as much as the per acre recovery as of January 1, 1943 has been 2635 barrels, the indicated total recovery per acre will be 16,637 barrels. This figure seems unduly optimistic in light of other estimates which have seldom exceeded 10,000 barrels per acre. There is, therefore, evidence to establish a belief that

The above recommendation has been carried out to a limited extent during the year 1942 as shown by the following tabulation and is being carried out to a much greater extent in 1943:

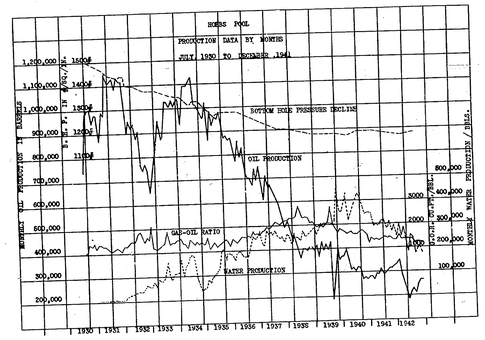
(These figures do not include Maljamar Field or gas run to El Paso Plant No. 1 dry gas)

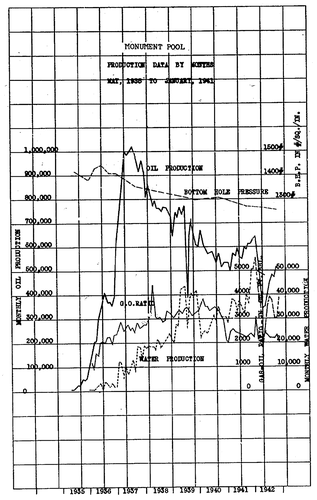
Total casinghead gas received in Lea County Plants	49,754,109 MCF
Total casinghead gas consumed as plant & lease fuel	7,551,636 "
Total casinghead gas shrinkage	4,122,172 "
Total casinghead gas vented	48,504,931 "
Total casinghead gas sold commercially	10,850,429 "
Barrels gasoline	1,723,973 "
Barrels butane, etc.	181,307 "
Total estimated casinghead gas (less Maljamar Field) prod.	84,767,118 "
Lea County 1942	
The percentage of gas vented from gasoline plants in 1942, as above described, was	66.67

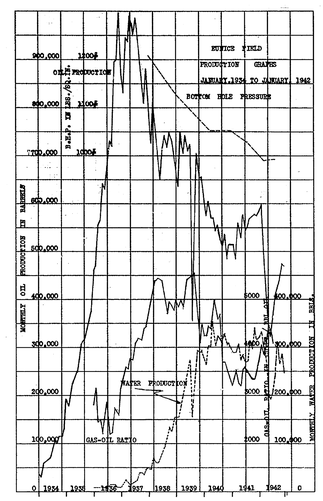
As a result of installation of additional lines and compressors by one of the major natural gasoline plants late in 1942, the percentage of gas vented in January, 1943 is indicative of a vast improvement in the picture as revealed by the following figures:

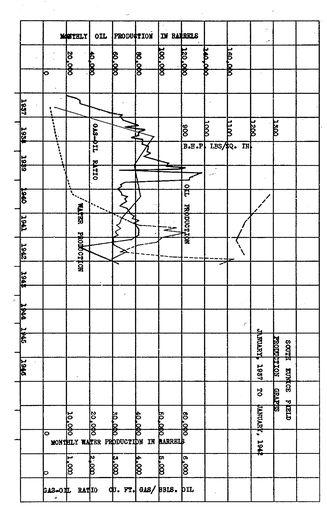
(Figures do not include Maljamar Field or dry gas from El Paso Plant No. 1)

Total casinghead gas received	6,023,169 MCF
Total casinghead gas consumed as plant & lease fuel	689,701 "
Total casinghead shrinkage	361,732 "
Total casinghead gas vented	2,695,394 "
Total casinghead gas sold commercially	2,273,186 "
Barrels gasoline	263,461 "
Barrels butane, etc.	30,291 "
Percentage of gas vented from gasoline plants during January, 1943 as above described, was	44.75









The committee appointed for studying and proposing the experimental work to be done in the Eunice and Monument Fields with regard to transfer of allowable from high gas-oil ratio wells to lower gas-oil ratio wells has used the information available in the periodic reports of Mr. Staley's office to compile the theoretical effect of transferring. These compilations are:

TABLE I. Wells shut in due to high gas-oil ratio

TABLE II. Wells which have been granted exemption to Order No. 250 of the Commission.

TABLE III. Marginal well nominations as submitted by the operators

TABLE IV. List of leases composing only one well and production information.

TABLE V. List of two unit leases and the calculated effect of transferring allowable to wells having lower gas-oil ratios.

TABLE VI. List of leases having three or more wells on contiguous portions of the lease and the calculated effect of transferring allowable to wells having lower gas-oil ratios.

TABLE VII. Summary of Tables IV, V and VI.

In calculating the effect of the transfers the committee used only information submitted by the operators on Form C-115 or recent tests by Mr. Staley's office. No consideration was given to any changes in gas-oil ratio for better or worse that may result from such transfer. Also in making the calculations no transfer was made unless there was an approximate saving of 500 cu/ft/bbl. and no well received more than two allowables (since gas-oil ratios were available only in conjunction with operator's report in Form C-115 on monthly production, their figures were used in all tables). While in these calculated transfers, the entire allowable of higher ratio wells was made to another well, it is of course, possible and probably desirable to distribute such transferred allowable to several wells where feasible.

Provided the operator recommend the adoption of a plan to transfer allowables the committee submits the following suggestions:

1. Transfer of allowable will be permitted only after application to and approved by the Commission. The application shall show 48-hour individual tests of production of oil, gas and water of the well from which transfer is requested and the well or wells receiving the transferred allowable. Such tests shall have been made within 30 days of date of submitting request for transfer. A plat of the wells involved shall be attached and the amount of oil to be transferred to each such well. Vote 4-0.

2. Permits to transfer shall be in force for a period of one year from date of approval. Renewals may be obtained at the discretion of the Commission only upon resubmission of the information as shown in (1) above.

3. Transfer of oil from one unit to another or others will be permitted only with contiguous portions of two same basic royalty provided the areas involved shall not exceed 320 acres.

4. Transfers of allowable oil can be made to a well or wells with a lower gas-oil ratio.

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TABLE I

WELLS SHUT IN DUE TO HIGH GAS OIL RATIO

FIELD	COMPANY	LEASE	WELL	S. T. R.
Monument	Amerada	Weir	7 D	26-19-36
	Amerada	Atkins	1 H	5-20-37
	Continental	State A	2 L	26-19-36
		Britt	1 C	5-20-37
		Britt B-15	3 L	15-20-37
		Britt B-15	7 K	15-20-37
	Ohio	McGrail	1 H	26-19-36
		McGrail	2 K	26-19-36
	Sun	Maxwell	5 G	35-19-36
	Texas	Weir	2 H	23-19-36
	Gulf	Whitmire	4 H	8-20-37
Eunice	Gulf	B. Ramsey	8 L	4-21-36
	Humble	S. Arpies	8 C	31-20-37
	Texas	Rector	3 J	32-21-36

TABLE NO. 2 CONTD

FIELD & COMPANY	LEASE	WELL	S.T.R.	AVG. PROD.	GAS VOLUME	GAS OIL RATIO	WATER	COMPUTED GAS	GAS VOLUME	GAS OIL RATIO	REMARKS
HOBBS-CONTD											
Shell	State L	1 Q	1-21-36	1035	25649	24782	240	279	7161		
Tex States	Atha	1 N	31-21-36	498	2271	4563	232	498	2271		Marginal 18 bbls.
Winkler Koch	State	1 R	5-21-36	1054	1717	1600		1023	1637		Doubtful if exempted
		1 Q	5-21-36	1054	1717	1600		1023	1637		" "
TOTAL				17907	2008815	11214	6294	71169	183139	2572	
GRAND TOTAL				29347	606499	20632	58541	15337	210829	10881	

APPROXIMATE GAS SURVEY

Difference	PROD.	VOLUME	RATIO	(SHOWS DIFFERENCE I. ONLY OF OIL AND (GAS PRODUCTION WITHOUT AND WITH PENALTY) OIL PROD.	GAS VOLUME
Monument	6254	326194	20649	10502	
Eunice	3733	68676	1838	2215	
Both Fields	9990	394870	9751	12738	

	TOTAL WELLS	EFFECTIVE IF SAVING
Monument	14	12
Eunice	21	15
	35	27

NOTE: The two columns shown on the right hand side of Tabulation 2 above, reflect amounts of oil and gas produced under application of Gas-Oil Ratio penalties. Other figures reflect amounts of oil, gas and water produced when Gas-Oil Ratio penalty has not been applied.

COMPANY LEASE	WELL	UNIT	S.T.R.	REQUESTED NOMINATION DAILY	MONTHLY	EUNICE-CONTD. PENALIZED TO	GAS-OIL RATIO	GAS VOLUME	WATER	REMARKS
GULF-CONTD.										
Campbell	3	H	7-21-36	6	180		19509	3512	111	
"	4	L	7-21-36	16	480		11599	5568	31	
Collins	1	F	14-21-36	26	780		3047	2377		
"	4	K	14-21-36	13	390		5140	2001	180	
Janda B	1	J	32-21-36	19	570		3107	1771	15934	Gas lift
" D	1	T	2-21-36	14	420		8352	3098		
Leck	1	B	14-21-36	23	690		3283	2251		
Reeves	1	L	29-20-37	14	420		1254	527		Pump
"	2	E	29-20-37	5	150		600	90		Pump
Sunshine	2	N	30-20-37	28	840		18100	15200	67	Exemption
"	3	K	30-20-37	21	630		3810	2400		
White B	1	P	35-20-36	26	780	240	30715	7372		
HUMBLE OIL & RFG. CO.										
Tequano	2	H	35-20-36	10	300		8000	2406	68	
"	5	O	26-20-36	8	240		10810	2594		
State B	9	K	29-21-36	20	600		2646	1388	265	Gas lift
MIDCONTINENT PET. CORP.										
Marshall	2	I	11-21-36	21	630		9500	5985	30	
MURRAY ST AL										
State	1	M	3-21-36	29	870		5150	4481		
"	2	L	3-21-36	18	540		5090	2449		Gas lift
"	3	N	3-21-36	14	420		4890	2054		Gas lift
"	4	E	3-21-36	25	750		5110	3833		
PHILLIPS PET. CO.										
Edna State	1	D	30-20-37	22	660		9177	6255		
Hudson	1	B	30-20-37	12	360		1996	719	287	Pump
Mexico	1	A	30-20-37	16	480		4928	2317		
Rea	1	A	26-20-36	16	480		7273	3780		
"	2	H	26-20-36	14	420		40147	16662		Exemption
Cunpam	1	F	19-20-37	16	480		687	330	9	
POLLARD, C.C.										
State	1	L	29-21-36	14	420				16	Pump
REPOLLO OIL CO.										
Berryman	1	O	11-21-36	21	630		880	554	15	
State "196"	2	L	32-20-37	12	360	150	47980	7197	4	
Ida White A	1	I	33-20-36	25	750	570	13588	7745	104	

TABLE NO. 4

COMPARISON BETWEEN OPERATORS & GASOLINE PLANT GAS VOLUMES ON SINGLE WELL UNITS

COMPANY LEASE	WELL	UNIT	S.T.R.	AVG. NO. PROD.	OPERATORS REPORTED GAS VOL.	MONTHS GAS PLANT	PLANT OPERAT. G.O.R.	NO. WATER G.O.R.	METHOD PROD.	WATER ALLOC. PROP.	WATER ALLOC. PENALIZED	REMARKS
AMERADA PET. CORP.												Well S.I. 10/8/42
Atkins	1	M	5-20-37	496	6254		12608					
Andrews	1	C	23-21-36	403	727		1803		F			
Culp	1	O	21-19-37	1316	788	1007	599	765	F			
Gaither	1	I	34-19-36	893	2237	4492	2503	5030	F			
Maxey	1	M	33-19-37	1275	497	647	390	507	F			
Love	1	J	32-19-37	932	994	1446	1067	1551	49			
State 1	1	C	2-20-36	966	470	413	487	487				
State M	1	F	2-20-36	967	199		206		F			
State M	2	J	11-20-36	975	2121		2172		F			
State T	7	L	28-19-37	968	3774		3899		51	F		
State X	1	L	16-20-37	1168	603	817	644	737	F			
Weir A	1	L	25-19-36	142	456		3214		GL & F	4		
ANDERSON PRICHARD OIL CORP.												
Britt B	1	N	5-2-37	1182	43352		35000		F		23%	
State A	1	E	2-20-36	600	1459	1630	2431	2716	F			
ATLANTIC RFG. CO.												
Crutchfield	1	I	32-19-37	1161	4632		3301	1444	F			
CITIES SERVICE OIL CO.												
Parsons	1	F	27-19-36	373	280		750		22	GL		
CONTINENTAL OIL CO.												
Britt A	1	D	18-20-37	912	412		452		F			
Britt B	1	C	8-20-37	367	1398	1393	4327	3796	573	F		Well S.I. 10/8/42
Britt B	1	N	16-20-37	895	14509		16211		1740	F		
Sanderson AB	1	D	11-20-36	524	1688		1977					
State A	1	I	7-19-37	562	225		400			GL	19	
State A	1	L	19-19-37	1012	417	269	412	266		F		
State C	2	E	16-20-37	1056	438	214	415	203		F		
GENERAL CRUDE OIL CO.												
State G	1	D	16-20-37	1261	817	528	648	419		F		
GULF OIL CORP.												
Bates	1	P	26-19-36	959	2151	7572	2356	8330		F		
Autter D	1	M	8-19-36	1115	606	717	547	641		F		
Ship B	1	L	8-19-37	986	1653	2238	1722	2316		F		
Weir	1	A	33-19-36	510	2686	4562	5270	8965	229	F	17	
Weir B	1	J	26-19-36	235	765		3258		31	F	2	

TYPICAL REMEDIAL RESULTS-SAND FIELDS

MAHOY

Gulf Oil Corp. No. 1 Matteson @ 18-21S-37E
1941 set packer @ 3730 2000 acid below
Before gas-oil ratio 23958
After " " 3998

PENROSE

Continental Elliott Bed No. 1 9-22S-37E
1938 packer @ 3564
Before gas-oil ratio 34454
After " " " 18251
1940

WORK PERFORMED	TEST	AFTER	
Acid 1000 gal. (3640-3714)	Oil 31	Gas MCF	824
Shot 30 qts. (3714-3724)	" 23	"	561
Set pkr. 13 times in zone (3550-3680)	" 12½	"	971 best test
1500 gal. formation plug (csg-3556)	" 4	"	848

Shut well in account of high gas-oil ratio

Continental Elliott A-15 No. 2 15-22S-37E
1938 packer @ 3554;
Before gas-oil ratio 35000
After " " " 14000
Reset packer 3638
Before gas-oil ratio 14000
After " " " 16663
Present gas-oil ratio 24320

MATTIX

Repello Oil Co. Mossely #4 34-24S-37E
1940 shot 200 qts. 3355-3435 (lower pay)
solid stemming; packer @ 3324
Before workover 30 oil; gas-oil ratio 44000
After workover 72 " " " " 19153
Present production 11 " " " " 59978

Anderson Prichard Oil Co. State A #1 32-24S-37E
1941 Shot 90 qts. 3510-3540 solid stemming
Before 65 oil; gas-oil ratio 27000
After 61 " " " " 7835
Now " " " 37321

Anderson Prichard State A No. 2 32-24S-37E
1941 set pkr. 4 times with no beneficial results
Shot 120 qts. 3507-34 solid stemming
Before 105 oil; 3040 MCF gas
After 106 " 7550 gas-oil ratio
Now 31182 " " "

Stanolind Oil & Gas C. Meyers A-2 22-21S-37E
1941 treated with 1500 gal. formation plug
Before gas-oil ratio 37000
After " " " " 16000
Since increased gas-oil ratio 39780 now

SKELLY

Anderson Prichard Blinebry No. 1 29-23S-37E
March 1941 set packer @ 3540 - no change in oil or gas production - no suitable packer seat was available below 3540, therefore, further attempts were not made.
Present gas-oil ratio 20799

Continental Farney A No. 2 5-23S-36E
1941 before 13 oil; 7 water; 23618 gas-oil ratio
Packer set @ 3734
Below packer 0 oil; 4 water; 186 MCF
Above packer 41 oil; 7 water; 30488 gas-oil ratio
Packer 3660
Below 0 oil; 12 water; 200 MCF
Above 38 oil; 17 water; 24200 gas-oil ratio
Now 12 oil; no water; 38075 gas-oil ratio

DISCUSSION OF REMEDIAL RESULTS IN THE COOPER, LYNN AND JAL FIELDS

The study of numerous remedial jobs performed in the dolomitic lime fields in the southern portion of the county of which a few typical examples have been outlined above, brings forth the general conclusions:

1. The particular fields are characterized by early water invasion, control of which has been proven futile in the history of many wells. Water shut off has been accomplished almost universally at the cost of the entire oil production capacity of the well, resulting in many abandonments.

2. High gas-oil ratios in these fields are the necessary evil which must accompany natural flow of large fluid volumes only a small portion of which is oil.

LANGLIE FIELD

Surface boundaries of the Langlie Field have not been established in conformity with a variety of structural and depositional conditions within the area embraced. For example, several 40-acre units within the field are known to be producing oil from a dolomitic limestone section while others produce from sand bodies of various stratigraphic positions. Two distinct structural folds add to the complexity of problems within the field.

In order to avoid any undue confusion the Committee has deemed it advisable to exclude production data on approximately 520 acres which are included in a repressuring project within the Langlie Field.

A few observations which have been made from a study of the following data are hereinth presented. It will be noted from a study of the allowable Development Curve Graph B-5 that the field attained its maximum development about January, 1940. The average daily allowable of marginal wells, six months prior to this time had shown a pronounced decline as also had the average daily top allowable per well to a lesser degree. Immediately following this period the number of marginal wells increased sharply although the average daily allowable or potential of such wells increased only eight barrels. In as much as the daily top allowable per unit decreased some during this period while the average daily allowable of marginal wells increased only slightly it is evident that the reservoir from which the marginal wells were producing had no reserve and that such oil as remained was being rapidly withdrawn. Further evidence in support of this statement can be drawn from a study of the Production Gas-Oil Ratio Curve C-5.

The relative constant volume of gas produced per month from July, 1939 to present date, as shown on Graph C-5 when compared to the increase in gas-oil ratio for the same period might be interpreted as suggesting a decrease in the efficiency of the rate of flow except that at the same time this was occurring the total amount of oil being produced was on the decrease and the total number of marginal wells was on the increase. It is apparent that the reservoir was being voided of oil at a much greater rate than it was of gas.

Graph D-4 Production Development Curve, shows a rapid increase in the amount of water being produced after January, 1940. This fact is misleading in that it might be interpreted as reflecting a condition for the entire field were actually it is primarily the result of performance of only a few wells that produce from dolomitic limestone.

Structural and stratigraphic conditions which, in the Langlie Field, appear to be controlling factors in production problems, can perhaps best be described by the following quotation, namely, "the factors of structure and stratigraphy are heterogeneous in their homogeneity". It is the opinion of the Committee that exceptions within the Langlie Field do not necessarily determine the rule. It believes, further, that in considering the field as a unit there is evidence of the existence of gas in the reservoir in quantities more than sufficient to produce the oil associated with it. The problem, therefore, resolves itself into one of surface rather than subsurface waste.

Much has been done in the past to deliver gas to a commercial market from the Langlie Field and assurance has been given that much more will be done in an effort to increase the deliveries as soon as necessary materials can be made available.

flowing energy will remain in the Monument Field long after said field has attained its ultimate recovery of oil.

EUNICE

Within the Eunice Field original reservoir pressure has been estimated as having been 1525 lbs. This value had decreased to 1080 lbs. on January 1, 1940 and, during said period the field had produced 40,176,106 barrels of oil or with a pressure decline rate of 11.07 lbs. per million barrels of oil produced. The field produced 18,309,355 barrels of oil between the period of January 1, 1940 to January 1, 1943, and in so doing reflected a reservoir pressure drop of 70 lbs. The pounds pressure drop per million barrels of oil produced, was therefore, 3.90.

The reservoir has shown a very slight pressure increase during the six months period ending July, 1942. This change may reflect a decrease in oil runs or the appearance of an effective water drive or possibly a combination of both factors.

There is reason to believe that, regardless of the cause of pressure increase, under present rates of production no subsurface waste exists in the Eunice Field.

SOUTH EUNICE

A record of reservoir pressures in the South Eunice Field is limited to the period July 1, 1940 to present date. The Committee is therefore, somewhat handicapped by indefinite pressure trends in its study of reservoir conditions.

It has been found that some insight into the problem can be gained by comparing a period in the South Eunice Field wherein pressure data is available with a corresponding period in the Eunice Field. In so doing, a greater efficiency for the rate of flow in the South Eunice Field has been found than has been determined for the Eunice Field.

The increase in reservoir pressure shown in the South Eunice Field for the period February 1, 1942 to July 1, 1942 suggests that, under the rates of production then existing, water may have been entering the reservoir at a sufficient rate to produce an effective water drive. If such is the case, subsurface waste in the field cannot be admitted.

GENERAL DISCUSSION:

The Committee states again its inability to determine by a mathematical formula, a specific limiting gas-oil ratio for any field in Lea County. It feels, however, that although lacking evidence of subsurface waste it need not recommend lower limiting ratios for any field than those now in force by virtue of Oil Conservation Order No. 250.

The Committee, in approaching the problem, has considered oil to be the commodity of prime importance and gas as incidental to the production thereof. (If the opposite of this assumption is true the necessity for conserving the gas until such time as a commercial market is developed for all of it becomes of the greatest importance). The Committee believes that especially under present day conditions, oil is a commodity of prime importance and its production is essential to the national welfare. The Committee admits that with production of oil there is surface waste of gas and believes that such should be prevented. It, therefore, makes the following recommendation: that all gas produced with oil be returned to the reservoir from which it originated, or that it be sold for commercial consumption.

The above recommendation has been carried out to a limited extent during the year 1942 as shown by the following tabulation and is being carried out to a much greater extent in 1943:

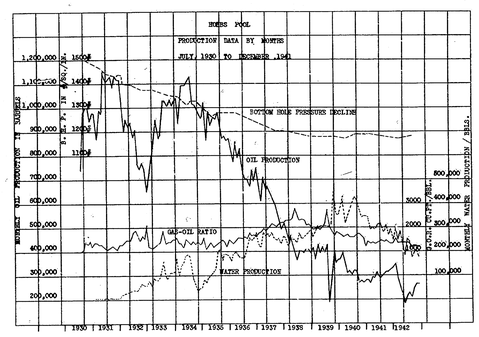
(These figures do not include Maljamar Field or gas run to El Paso Plant No. 1 dry gas)

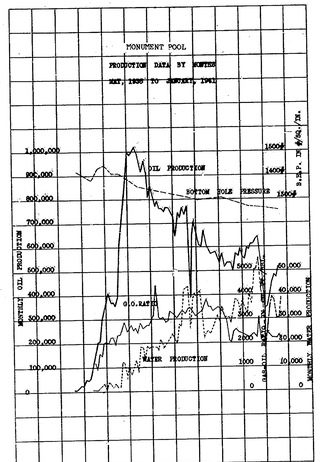
Total casinghead gas received in Lea County Plants - - - -	69,754,102 MCF
Total casinghead gas consumed as plant & lease fuel - - -	7,351,636 "
Total casinghead gas shrinkage - - - - - - - - - - - - -	4,182,172 "
Total casinghead gas vented - - - - - - - - - - - - - - -	48,204,231 "
Total casinghead gas sold commercially - - - - - - - - -	10,890,059 "
Barrels gasoline -	1,723,375 "
Barrels butane, etc. - - - - - - - - - - - - - - - - - -	181,307 "
Total estimated casinghead gas (less Maljamar Field) prod. Lea County 1942 -	84,787,118 "
The percentage of gas vented from gasoline plants in 1942, as above described, was - - - - - - - - - - - - - - - - - -	66.67

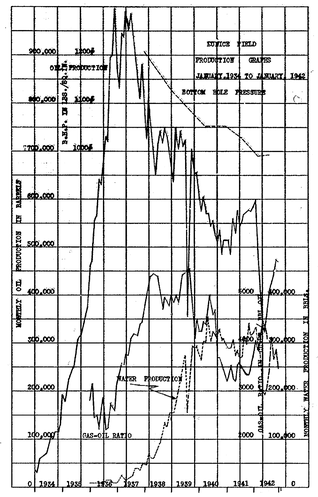
As a result of installation of additional lines and compressors by one of the major natural gasoline plants like in 1942, the percentage of gas vented in January, 1943 is indicative of a vast improvement in the picture as revealed by the following figures:

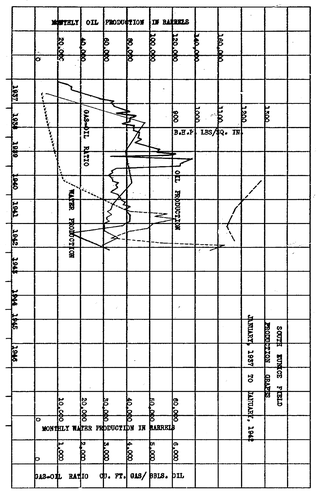
(Figures do not include Maljamar Field or dry gas from El Paso Plant No. 1)

Total casinghead gas received - - - - - - - - - - - - - -	6,023,169 MCF
Total casinghead gas consumed as plant & lease fuel - - -	689,961 "
Total casinghead shrinkage - - - - - - - - - - - - - - -	361,732 "
Total casinghead gas vented - - - - - - - - - - - - - - -	2,545,394 "
Total casinghead gas sold commercially - - - - - - - - -	2,291,686 "
Barrels gasoline -	253,461 "
Barrels butane, etc. - - - - - - - - - - - - - - - - - -	30,291 "
Percentage of gas vented from gasoline plants during January, 1943 as above described, was - - - - - - - - - - - - - -	44.75









5. The amount of allowable transferred shall be the marginal or normal allowable for the field, whichever is the smaller, and not affected by Order No. 250 except as it may be affected by the gas-oil ratio of the well or wells to which transfer is made.

6. No well shall be permitted to produce an allowable in excess of two wells.

Don Tapper - Amerada Pet. Corp.
L.L. Gray - Gulf Oil Corp.
Ralph O'Neil - Phillips Pet. Co.
S.V. McCollum - Continental Oil Co.
J.S. Dewey - Humble Oil & Mfg. Co.

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TABLE 2

EXEMPTED WELLS UNDER GAS-OIL RATIO ORDER

FIELD	COMPANY	LEASE	WELL		S.T.R.	AVG. PROD.	GAS VOLUME	GAS OIL RATIO	WATER	COMPUTED PROD.	GAS VOLUME	GAS OIL RATIO	REMARKS
Monument	Anderson Prichard	Britt B	1	N	5-20-37	1182	43563	37058		155	6138		Marg.23 bbls.
		State A	1	E	2-20-36	600	1489	2481		600	1489	Doubtful if exemption is granted	
	Atlantic Continental	Crutch.	1	I	32-19-37	1161	3832	3301	4644	1023	3377	"	
		Britt B	1	M	10-20-37	695	17546	19005	1799	310	6138		
		Britt B	3	L	10-20-37	1035	183959	177779	102	31	6138		
		Britt B	4	M	10-20-37	1035	23898	27921	108	217	6138		
		Sanderson B	1	A	10-20-36	930	30607	32921	1305	186	6138		
		Sanderson B	2	H	10-20-36	902	7077	7940	2176	775	6138		
		State A	3	E	26-19-36	248	6596	26719	25	248	6138	Marginal 15 bbls.	
	Gulf	Smith	1	M	24-19-36	484	13014	27021	35	155	6138	Marginal 14 bbls.	
		"	2	L	24-19-36	332	10648	31159	239	186	6138	Marginal 10 bbls.	
		Whitmire	1	G	8-20-37	1037	15723	11305		434	6138		
	Repello	Mossley	3	K	11-20-36	592	9955	9111		744	6138		
	Sun	Waverly	5	C	35-19-36	559	28836	50579		124	6138		
Skelly						11749	429519	36570	10709	6199	76.98	19100	
Eunice	Cities Service	Felton	1	C	21-21-36	309	11524	37317	19	186	7151	Marginal 14 bbls.	
		State F	2	I	33-20-37	775	19195	24767	189	279	7151	Marginal 22 bbls.	
	Continental	Lockhart	4	A	13-21-36	1524	16268	11399	698	620	7151		
		"	5	L	17-21-36	1303	13921	9588		713	7151		
		Lockhart B	1	D	21-21-36	802	7288	9125	217	558	7151		
		Hager B	3	A	8-21-36	1103	7591	6911		1023	7151		
	Drlg.& Expl.	State	1	P	12-21-36	317	6108	25812		341	7151		
		"	2	O	12-21-36	800	7368	9205		837	7151		
		"	3	J	12-21-36	829	9709	10350		682	7151		
		State F	1	B	11-21-36	398	3764	9456		829	7151		
	Gulf	Felton	1	F	21-21-36	1053	5469	5219	24100	1023	6554		
		Leonard State	1	G	22-21-36	1559	5715	5325	15296	1023	6554		
		Arnott Harvey B	2	A	25-21-36	1342	7738	7115	6200	961	7151		
		Sunshine	2	N	30-20-37	342	10697	31300	57	465	7151	Marginal 29 bbls.	
	Phillips	Sam	2	H	22-20-37	913	15395	28127		186	7151	Marginal 15 bbls.	
	Shell	State C	1	A	21-21-36	91.	11042	12111	175	558	7151		
		"	2	K	21-21-36	915	8791	9032	95	711	7151		

TABLE No. 3

MARGINAL WELLS AS SUBMITTED BY THE OPERATORS DURINGDEC-1942

COMPANY LEASE	WELL	UNIT	S.T.R.	REQUESTED DAILY	NOMINATION MONTHLY	PENALIZED TO	GAS-OIL RATIO	GAS VOLUME	WATER	REMARKS
ANDERSON PRT. CORP.										
State M	3	F	30-20-37	23	690		4059	3422		
"	4	E	20-20-37	23	693		1159	804		
ATLANTIC REG. CO.										
State B	2	I	8-21-36	23	690		917	633		
" Z	2	T	5-21-36	31	930		5321	4945		
" L	5	D	3-21-36	19	570		2071	1180		Gas lift
" O	1	S	3-20-37	7	210		912	192		Gas lift
"	2	D	3-20-37	25	750	270	39318	7370		Pump
CITIES SERVICE OIL CO.										
Felten	1	C	28-21-36	14	420		36767	15434	10	Exemption
State D	1	B	32-21-36	25	750		5250	3938		Gas lift
"	2	G	32-21-36	20	600		5040	3024		Gas lift
"	3	A	32-21-36	10	300	180	39795	7163		
"	4	H	32-21-36	5	150		4000	600		Gas lift
" F	1	O	30-20-37	30	900		5240	4716		Pump
"	2	I	30-20-37	20	600		25750	15450	429	Exemption
"	3	P	30-20-37	15	450		5176	2327	30	
CONTINENTAL OIL CO.										
Lockhart A	1	H	30-21-36	7	210		400	84	327	Gas lift
"	2	A	30-21-36	9	270		400	108	1850	Gas lift
"	3	B	30-21-36	10	300		400	120	3100	Pump
"	4	G	30-21-36	16	480		400	192	26800	Gas lift
"	6	F	30-21-36	6	180		400	72	248	Gas lift
" B	6	M	14-21-36	27	810		6632	5372	310	
FIELING, BLAIR										
Turner Estate	1	G	32-20-37	10	300		1800	540		Gas lift
"	2	C	32-20-37	13	396		1500	749		Gas lift
"	3	F	32-20-37	5	270		4380	1183		
GETTY OIL CO.										
State D	1	H	32-20-37	7	210		942	198	22	
GULF OIL CORP.										
Butler	1	O	19-20-37	28	840		1353	1145	72	
"	2	J	19-20-37	27	810		2860	2317	42	
Bell Ramsey	8	L	4-21-36	16	480		63321	30394		
" B	2	M	33-20-37	16	459		7324	1116	31	Shut in
Campbell	1	N	7-21-36	19	570		9311	5307	4859	Pump Gas lift

COMPANY LEASE	WELL	UNIT	S.T.R.	REQUESTED DAILY	NOMINATION MONTHLY	PENALIZED TO	GAS-OIL RATIO	GAS VOLUME	WATER	REMARKS
EUNICE-CONTD.										
SKELLY OIL CO., INC.										
State A	1	H	12-21-35	25	750					
"	2	A	12-21-35	6	180				37	Pump
" J	1	N	32-20-36	9	270		43659	7859		
"	2	O	32-20-36	14	420		1629	660	4	
"	3	P	32-20-36	11	330		12411	5213	4	
B K	2	H	36-20-36	30	900		3429	1132		
"	3	G	36-20-36	30	900		2138	1924		
"	4	B	36-20-36	30	900		5882	5294		
" M	1	I	24-21-35	7	210		4700	4230		
SKELLY OIL CO.							27383	5750	2	
State G	1	J	30-20-37	20	600					
STANOLIND OIL & GAS CO.							5879	3527	12	
Gilluly B	3	N	32-20-37	4	120		5600	672		
State C "11"	1	X	2-21-36	10	300		1646	494	15	Pump
"	2	W	2-21-36	11	330		1655	480	16	Pump
SUN OIL CO.										
Akens	6	C	3-21-36	12	360		3500	1260		
THE TEXAS CO.										
Reeder	1	I	30-21-36	5	150		9125	1369	16731	
"	2	P	30-21-36	5	150		8308	1246	16731	
"	4	O	30-21-36	20	600		12811	7687	1714	
TIDEWATER ASSOC. OIL CO.										
Marshall	1	G	13-21-36	3	90		2704	243	107	
T-P STATES OIL CO.										
Abbe	1	M	31-21-36	18	540		4563	2464	332	
TOTAL	74				16120	37590	7955	289725	89088	
TOTAL MONUMENT & EUNICE 101					51790	49900	8200	411875	97034	

COMPANY LEASE	WELL	UNIT	S.T.R.	AVG. NO. PROD.	OPERATORS REPORTED GAS VOL MCF	GAS PLANT VOL MCF	MONUMENT-CONTD. PLANT GASOLINE G.P.M.	C.W. G.O.R.	NO. RATE	METHOD	DAILY ALLOW.	DAILY ALLOW.	REMARKS
MERALCO OIL & MFG. CO.													
State M	1	L	21-19-37	840	2175		2509		149	F			
LANE, A.F.													
Williams	1	M	34-19-37	842	1053		1251			F			
OHIO OIL CO.													
McGrall	3	H	27-19-37	859	2122		2820			F			
OHIO FEDO OIL CO.													
Fair	1	L	3-20-37	325						F			
PHILLIPS PET. CO.													
Culp	1	D	19-19-37	717	6012	8032	8385	11209		F			26*
Land Office	1	K	19-19-37	1692	4452	534	2635	268		F			
Patsy	1	B	18-20-37	1494	318		213			F			
REPOLLO OIL CO.													
Bordages	1	M	28-19-37	583	356		610		104	F			
ROBLEY OIL CO.													
Crutchfield	1	H	37-19-37	821	970	10038	1122	11795		F			
SHELL OIL CO.													
Cooper A	1	B	4-20-37	1164	1356	819	1165	703		F			
State A	1	P	35-19-36	1014	1798	1023	1774	1008	65	F			
State F	1	J	29-19-37	794	1048	1563	1620	1968		F			
State G	1	M	16 -20-37	1179	1709	625	1150	530		F			
State H	1	I	20-19-37	941	3142	3669	3340	3891	40	F	8		
SKELLY OIL CO.													
Christmas	1	M	25-19-36	212	1264	5190	5984	29254		F			
SOUTHWEST EXPLORATION CO.													
Klingsmith	1	P	20-19-37	1582	1582		1030			F			
STANOLIND OIL & GAS CO.													
Gilluly A	1	N	8-20-37	961	104	116	109	121		F			
SUN OIL CO.													
Barr	1	M	26-19-36	124	5642		4550			F			6*
SUPERIOR OIL CO.													
State	3	I	13-20-36	534	413	413	442	442		F			
THE TEXAS CO.													
Mex. Int. Inc.	1	C	17-19-37	1039	2119	2123	2.2	2122	70	F			
Cook	1	A	27-19-37	752	739	626	[illegible]	992		F			
Kehane	1	A	16-19-37	980	2124		2115			F			
Kehane B	1	E	15-19-37	1167	3.72		2137			F			

TABLE NO. 3

MAXIMUM MIXTURES OF GASOLINE OR GASOLINES NOT EXCEEDING 7.0 PSI

COMPANY LEASE	WELL NO.	DATE	MAXIMUM MIXTURE	GASOLINE PRODUCED	GAS-OIL RATIO	GAS	OIL	G.O.R.	BBLS. WATER	REMARKS
ALMA PET. CORP.										
State A	1	12-19-36	4	120	324	386	1	386	4 Flow	
ANDERSON PICKLING OIL CORP.										
State B	1	2-20-37	1	690	23570	23570	2	Bomgaline		
CITIES SERVICE OIL CO.										
Stanton	1	12-19-36	12	360	790	270	22	Gas Lift		
CONTINENTAL OIL CO.										
State A	1	2-19-37	19	570	400	228		Gas Lift		
DOT OIL CORP.										
Bernhardt	1	M 26-19-36	25	750	38481	29011	25	Bomgaline		
State A	1	1-19-37	19	570	1400	1777	1400	Gas Lift		
CONTINENTAL OIL CO.										
Freeman	1	F 27-19-36	12	360	790	270	22	Gas Lift		
CITIES SERVICE OIL CO.										
State B	1	2-20-37	12	690	23570	23570	2	Bomgaline		
ANDERSON PICKLING OIL CORP.										
State A	1	12-19-36	4	120	324	386	1	Gas Lift & Flow		
ALMA PET. CORP.										

COMPANY LEASE	WELL NO.	DATE	MAXIMUM MIXTURE	GASOLINE PRODUCED	GAS-OIL RATIO	GAS	OIL	G.O.R.	BBLS. WATER	REMARKS
State B	1	2-20-37	1	690	23570	23570	2	Bomgaline		
Freeman	1	F 27-19-36	12	360	790	270	22	Gas Lift		
CONTINENTAL OIL CO.										
State A	1	1-19-37	19	570	400	228		Gas Lift		
DOT OIL CORP.										
Bernhardt	1	M 26-19-36	25	750	38481	29011	25	Bomgaline		
State A	1	1-19-37	19	570	1400	1777	1400	Gas Lift		
CONTINENTAL OIL CO.										
Freeman	1	F 27-19-36	12	360	790	270	22	Gas Lift		
CITIES SERVICE OIL CO.										
Stanton	1	12-19-36	12	360	790	270	22	Gas Lift		
ANDERSON PICKLING OIL CORP.										
State A	1	12-19-36	4	120	324	386	1	Gas Lift & Flow		
ALMA PET. CORP.										

TABLE NO. 4

MAXIMUM MIXTURES OF GASOLINE OR GASOLINES NOT EXCEEDING 7.0 PSI

COMPANY LEASE	WELL NO.	DATE	MAXIMUM MIXTURE	GASOLINE PRODUCED	GAS-OIL RATIO	GAS	OIL	G.O.R.	BBLS. WATER	REMARKS
Stanton	1	12-19-36	12	360	790	270	22	Gas Lift		
CITIES SERVICE OIL CO.										
Freeman	1	F 27-19-36	12	360	790	270	22	Gas Lift		
CONTINENTAL OIL CO.										
State A	1	1-19-37	19	570	400	228		Gas Lift		
DOT OIL CORP.										
Bernhardt	1	M 26-19-36	25	750	38481	29011	25	Bomgaline		
State A	1	1-19-37	19	570	1400	1777	1400	Gas Lift		
CONTINENTAL OIL CO.										
Stanton	1	12-19-36	12	360	790	270	22	Gas Lift		
ANDERSON PICKLING OIL CORP.										
State A	1	12-19-36	4	120	324	386	1	Gas Lift & Flow		
ALMA PET. CORP.										

TABLE NO. 5

TWO-WELL LEASES OF ALLOWABLE FROM A HIGHER GAS-OIL RATIO WELL TO A LOWER GAS-OIL RATIO WELL ON TWO WELL UNITS

COMPANY LEASE	WELL UNIT S.T.R.	ALLOW. NO. BBLS.	MAXIMUM MIXTURE PROD.	GAS	OIL	G.O.R.	BBLS. WATER	REMARKS
ALMA PET. CORP.								
Stanton	1	12-19-36	4	120	324	386	1	Gas Lift & Flow
ANDERSON PICKLING OIL CORP.								
Stanton	1	12-19-36	12	360	790	270	22	Gas Lift
CONTINENTAL OIL CO.								
Freeman	1	F 27-19-36	12	360	790	270	22	Gas Lift
CITIES SERVICE OIL CO.								
State B	1	2-20-37	12	690	23570	23570	2	Bomgaline
ANDERSON PICKLING OIL CORP.								
Stanton	1	12-19-36	12	360	790	270	22	Gas Lift
CITIES SERVICE OIL CO.								
Stanton	1	12-19-36	12	360	790	270	22	Gas Lift
ANDERSON PICKLING OIL CORP.								
State A	1	12-19-36	4	120	324	386	1	Gas Lift & Flow
ALMA PET. CORP.								

TABLE NO. 6

MAXIMUM MIXTURES IN ALLOWABLE OIL-GAS RATIO IN EXCESS OF 4000 (LIQUIDS ISSUED)

COMPANY LEASE	WELL UNIT S.T.R.	ALLOW. NO. BBLS.	MAXIMUM MIXTURE PROD.	GAS	OIL	G.O.R.	BBLS. WATER	REMARKS
ALMA PET. CORP.								
Stanton	1	12-19-36	4	120	324	386	1	Gas Lift & Flow
ANDERSON PICKLING OIL CORP.								
Stanton	1	12-19-36	12	360	790	270	22	Gas Lift
CONTINENTAL OIL CO.								
Freeman	1	F 27-19-36	12	360	790	270	22	Gas Lift
CITIES SERVICE OIL CO.								
State B	1	2-20-37	12	690	23570	23570	2	Bomgaline
ANDERSON PICKLING OIL CORP.								
Stanton	1	12-19-36	12	360	790	270	22	Gas Lift
CITIES SERVICE OIL CO.								
Stanton	1	12-19-36	12	360	790	270	22	Gas Lift
ANDERSON PICKLING OIL CORP.								
State A	1	12-19-36	4	120	324	386	1	Gas Lift & Flow
ALMA PET. CORP.								

TABLE NO. 7

MAXIMUM MIXTURES IN ALLOWABLE OIL-GAS RATIO IN EXCESS OF 4000 (TOTAL ISSUED)

COMPANY LEASE	WELL UNIT S.T.R.	ALLOW. NO. BBLS.	MAXIMUM MIXTURE PROD.	GAS	OIL	G.O.R.	BBLS. WATER	REMARKS
ALMA PET. CORP.								
Stanton	1	12-19-36	4	120	324	386	1	Gas Lift & Flow
ANDERSON PICKLING OIL CORP.								
Stanton	1	12-19-36	12	360	790	270	22	Gas Lift
CONTINENTAL OIL CO.								
Freeman	1	F 27-19-36	12	360	790	270	22	Gas Lift
CITIES SERVICE OIL CO.								
State B	1	2-20-37	12	690	23570	23570	2	Bomgaline
ANDERSON PICKLING OIL CORP.								
Stanton	1	12-19-36	12	360	790	270	22	Gas Lift
CITIES SERVICE OIL CO.								
Stanton	1	12-19-36	12	360	790	270	22	Gas Lift
ANDERSON PICKLING OIL CORP.								
State A	1	12-19-36	4	120	324	386	1	Gas Lift & Flow
ALMA PET. CORP.								

TABLE NO. 8

MAXIMUM MIXTURES IN ALLOWABLE OIL-GAS RATIO IN EXCESS OF 4000 (TOTAL ISSUED)

COMPANY LEASE	WELL UNIT S.T.R.	ALLOW. NO. BBLS.	MAXIMUM MIXTURE PROD.	GAS	OIL	G.O.R.	BBLS. WATER	REMARKS
ALMA PET. CORP.								
Stanton	1	12-19-36	4	120	324	386	1	Gas Lift & Flow
ANDERSON PICKLING OIL CORP.								
Stanton	1	12-19-36	12	360	790	270	22	Gas Lift
CONTINENTAL OIL CO.								
Freeman	1	F 27-19-36	12	360	790	270	22	Gas Lift
CITIES SERVICE OIL CO.								
State B	1	2-20-37	12	690	23570	23570	2	Bomgaline
ANDERSON PICKLING OIL CORP.								
Stanton	1	12-19-36	12	360	790	270	22	Gas Lift
CITIES SERVICE OIL CO.								
Stanton	1	12-19-36	12	360	790	270	22	Gas Lift
ANDERSON PICKLING OIL CORP.								
State A	1	12-19-36	4	120	324	386	1	Gas Lift & Flow
ALMA PET. CORP.								

TABLE NO. 9

MAXIMUM MIXTURES IN ALLOWABLE OIL-GAS RATIO IN EXCESS OF 4000 (TOTAL ISSUED)

COMPANY LEASE	WELL UNIT S.T.R.	ALLOW. NO. BBLS.	MAXIMUM MIXTURE PROD.	GAS	OIL	G.O.R.	BBLS. WATER	REMARKS
ALMA PET. CORP.								
Stanton	1	12-19-36	4	120	324	386	1	Gas Lift & Flow
ANDERSON PICKLING OIL CORP.								
Stanton	1	12-19-36	12	360	790	270	22	Gas Lift
CONTINENTAL OIL CO.								
Freeman	1	F 27-19-36	12	360	790	270	22	Gas Lift
CITIES SERVICE OIL CO.								
State B	1	2-20-37	12	690	23570	23570	2	Bomgaline
ANDERSON PICKLING OIL CORP.								
Stanton	1	12-19-36	12	360	790	270	22	Gas Lift
CITIES SERVICE OIL CO.								
Stanton	1	12-19-36	12	360	790	270	22	Gas Lift
ANDERSON PICKLING OIL CORP.								
State A	1	12-19-36	4	120	324	386	1	Gas Lift & Flow
ALMA PET. CORP.								

MOVEMENT-CONTD.

COMPANY LEASE	WELL NO.	UNIT	S.T.R.	REQUESTED NOMINATION DAILY	MONTHLY TO	PENALIZED RATIO	GAS-OIL GAS VOLUME	WATER	REMARKS
TEXAS-CONTD.									
Weir	1	E	23-19-36	4	120		43200	24,36	2
TOTAL	27				12660	12210	10000	122130	7966

TABLE 4
COMPARISON BETWEEN OPERATORS AND GASOLINE PLANT
GAS VOLUMES ON SINGLE WELL UNITS
HUGHES FIELD

COMPANY LEASE	WELL NO.	S.T.R.	AVG. MONTHLY PROD.	OPERATORS REPORTED GAS VOL.	GASOLINE PLANT GAS VOL.	OPERATORS GAS OIL RATIO	PLANT GAS OIL RATIO	MONTHLY GAS CALC. GOR	METHOD PROD.	DAILY ALL. MCF/WELL	DAILY ALL PENALIZED WELL
GULF											
Dahman	1 C	17-21-36	564	666	759	668	581	-	F		
State B	1 J	20-21-36	1115	1470	1218	738	1038	-	F		
" J	1 K	29-21-36	1188	917	4832	776	4065	296	F		
" L	1 E	11-21-36	1071	2097	1956				F		
"	2 F	22-21-36	1064	1987	1862	56			F		
"	5 O	3-21-36	584	1168	2071				GL		
CITIES SERVICE											
Felton	1 C	28-21-36	300	9690	18900	32500	63100	10	F	14***	
CONTINENTAL											
Lankhart B	1 D	17-21-36	1027	410		400		558	GL		
Elliott St.	1 B	26-20-36	778	4843		6230		600	F		
Getty	A 1 A	19-21-36	388	248		650		40	F		
"	B 1 A	16-21-36	767	729	177	960	231		F		
"	C 1 E	16-21-36	758	3334	2988	4398	3933		F		
"	D 1 H	32-20-37	166	156		942		22	F	7	
GULF											
Felton	1 P	28-21-36	1063	5859	20863	5410	26464	24100	F		
James B	1 J	32-21 36	567	1762	12412	3107	21990	10534	GL	19	
" D	1 I	2-21-36	434	5425	3344	8358	7706		F	14***	
Lack	1 B	14-21-36	703	2196	6322	7796	8993		F	23***	
Wallkamey	1 M	27-21-36	1021	715		760		31	F	16	
Bell Ramey	2 M	33-20-37	557	1294		2324			F	26	8*
Ubito B	1 P	35-20-36	243	7193	524	30715	2156		F		
HUGHES											
State C	1 A	29-21-36	1021	420	376	411	368	54	F		
MIDCONTINENT											
Reeves	1 D	29-20-37	247	6960	6213	26696	24081		F		10*
PHILLIPS											
Adams St.	1 D	30-20-37	764	7240	11638	9477	15232		F	22***	
Hudson	1 B	30-20-37	367	573		1998		287	F	32	
Mgs	1 A	30-20-37	391	1868	2362	4828	6041		F	16	
Quapaw	1 P	19-20-37	435	299	865	687	1969	9	F	16	

TABLE 4 CONTD SINGLE WELL UNITS WITH GAS-OIL RATIO IN EXCESS OF 6500 CONTD

COMPANY LEASE	WELL NO.	S.T.R.	AVG. MONTHLY PROD.	OPERATORS REPORTED GAS VOL.	GASOLINE PLANT GAS VOL.	OPERATORS GAS OIL RATIO	PLANT GAS OIL GOR	MONTHLY GAS CALC. GOR	METHOD PROD.	DAILY ALL. MCF/WELL	DAILY ALL PENALIZED WELL
Single well units with gas oil ratio in excess of 6500 (Total Tests)											
GULF											
Felton	1 F	28-21-36	1063			28663		26466	281	6550	
James B	1 J	32-21-36	567			12412		21890	304	6660	
" D	1 I	2-21-36	434	3615					464	3625	Gas Lift
Lack	1 B	14-21-36	703			6322		8993	786	6322	Marginal 15***
Ubite B	1 P	35-20-36	243	7464			30715		217	6650	Marginal 8*
MIDCONTINENT											
Reeves	1 D	29-20-37	247	6594			26695		247	6594	Marginal 10*
PHILLIPS											
Adams St.	1 D	30-20-37	764			11637		15232	437	6650	
REPOLLO											
Ida White	1 K	35-20-36	689	7188			13588		689	6650	Marginal 19*
Shell Stated	1 I	24-21-35	256	7010			27383		243	6650	Marginal 7
Shelly St.	0 1 J	20-20-37	566			20510		35000	133	6650	Marginal 20
Tidewater											
State C	1 H	21-21-36	654	7229			8348		797	6650	
TOTAL	12 wells		6566	39010	98474				4418	76391	17291
			6566		137464	20959					

If these wells limited to the gas volume production based upon top allowable (33 bbls) times 31 days times 6500 gas-oil ratio or 6,850,000 c.ft. gas per month 76391

There is an approximate gas volume saving per mo. of 61098

or saving per operating day of 1971

Approximate gas volume saving per month

Monument & Eunice 200308

Approximate gas volume saving per day

Monument & Eunice 6462

EUNICE-CONTD.

COMPANY LEASE	WELL NO.	UNIT	S.T.R.	AVG. MO. PROD. BBLS.	MO. GAS MCF	G.O.R.	WATER BBLS.	METHOD PROD.	OIL	G.O.R.	GAS MCF	WATER BBLS.	REMARKS
ELLIOTT													
Elliott	1 I		26-20-36	838	3520	4200	100	GL					
"	2 J		"	837				F					Can not make allow.
GULF OIL CORP.													" " " "
Bell	1 O		8-21-36	1064	2149	2080	28	F					
"	2 P		"	1071	1605	1499	126	F	2135	1499	3210	252	
" B	1 Z		6-21-36	1070	4590	4271		F					Nov. ratio 18,316
"	2 Q		"	1071	3877	3620		F					
" D	1 T		"	1054	993	940	531	F					
"	2 O		"	1055	279	549	374	F	2109	549	1158	748	
" E	1 D		11-21-36	1055	4876	4622		F	2108	4622	9752		
"	2 C		"	1053	6348	6860		F					
Butler	1 O		19-20-37	8124	1107	1363	72	F					
"	2 J		"	7964	2272	2860	62	F					Marg. well 26
Graham St.	2 K		6-21-36	1068	3524	3363		F					" " " 27
"	2 R		"	1041	1064	1025		F	2089	1025	2140		
Janda	1 P		20-21-36	1010	478	473		F	2019	473	955		
"	2 I		"	1009	1317	1305		F					
Orcutt B	1 O		5-21-36	1050	1276	1310		F	2100	1310	2752		
"	2 H		"	1050	1701	1620		F					
A. Ramsey D	1 E		33-21-36	1060	4015	3851	7600	GL					
"	2 A		"	1040	7713	7416	6300	GL					No transfer--too much
Reeves	1 L		29-20-37	4494	549	1254		F					water
"	2 E		"	1304	78	600		F					Marginal 14 bbls.
PHILLIPS PET. CO.													" 5 "
New	1 A		26-20-36	4224	3323	7875		F					
"	2 H		"	3834	15376	40147		F					" 16 "
REPOLLO OIL CO.													" 14 "
Houston	1 C		7-21-36	1053	1000	950	122	F					
"	2 F		"	1054	1028	975	341	F					No advantage
State*196*	1 M		32-20-37	411	17714	47965	62	F					
"	2 L		"	4104	19672	47980	6	F					Marginal 12 bbls.
White	1 F		24-20-36	1054	2161	2090	31	F					Penal. to 5
"	2 I		"	1054	2171	2060	31	F					

TENTATIVE TRANSFER OF ALLOWABLE FROM A HIGHER GAS-OIL RATIO WELL TO A LOWER GAS-OIL RATIO WELL ON TWO WELL UNITS
MONUMENT

COMPANY LEASE	WELL NO.	UNIT	S.T.R.	AVG. PROD. BBLS.	MO. GAS MCF	G.O.R.	MO. WATER BBLS.	METHOD PROD.	OIL	G.O.R.	GAS MCF	WATER BBLS.	REMARKS
ANDARKO PET. CORP.													
Anderson	1 K		8-20-37	1104	2302	2085		F					
"	2 N		"	1105	536	485	207	F	2209	536	1182	414	
Byrd A	1 K		12-20-36	1108	907	819		F					
"	2 N		"	1049	434	414		F	2157	414	893		
Phillips A	1 G		33-19-37	1187	872	735		F					
"	2 H		"	1222	969	793		F					
S. Phillips	1 N		33-19-37	1130	622	492		F					
"	2 K		"	970	619	638		F					
State G	1 M		18-19-37	1095	866	809		F					
"	2 L		"	1165	77	66	61	F					? ratio
" H	1 O		1-20-36	1119	557	498		F					
"	2 J		"	1115	619	553		F					
" K	1 F		29-19-37	962	292	304	66	F	1921	304	585	132	
"	2 C		"	962	675	702	131	F					
" L	1 E		20-19-37	1251	657	525	26	F					
"	2 F		"	1286	556	432		F					
" P	1 L		29-19-37	1217	2596	2133		F					
"	2 M		"	1184	1010	853		F	2101	853	2048		
" C	1 J		16-20-37	1105	2004	1814	123	F	2241	1814	4065	246	
"	2 I		"	1136	4426	3896	284	F					
" R	1 K		29-19-37	1122	1931	1721	280	F					
"	2 N		"	1157	833	720	385	F	2279	720	1641	772	?
" S	1 N		2-20-36	993	812	818		F					
"	2 M		"	995	422	424	111	F					
" T	5 G		20-19-37	938	885	944	68	F	1877	944	1772	136	
"	6 B		"	939	2226	2371	49	F					
" U	1 S		32-19-37	1204	2221	1845		F					
"	2 D		"	1206	558	451		F	2409	451	1183		
" Y	1 I		17-20-37	1108	509	459		F					
"	2 J		"	1078	478	443		F					
" Z	1 A		13-20-37	1097	177	161		F					
"	2 H		"	1039	625	602		F					
Weir B	1 G		26-19-36	614	6391	10409		F					Penal. well 8/bb/day
"	2 F		"	831	1763	2122		F	144	2122	3066		

MOVEMENT-CONTD.

COMPANY LEASE	WELL NO.	UNIT	S.T.R.	AVG. PROD. BBLS.	MO. GAS MCF	G.O.R.	MO. WATER BBLS.	METHOD PROD.	OIL	G.O.R.	GAS MCF	WATER BBLS.	REMARKS
GULF-CONTD.													
Love	2 P		32-19-37	1077	963	894	92	F	2120	894	1895	184	
Luthy State	1 Z		29-19-37	1085	945	871		F					
"	2 D		"	1114	573	514		F	2199	514	1130		
Martin	1 I		25-19-36	1091	2027	1858		F					
"	2 P		"	1120	2193	1958		F					
Phillips	1 B		31-19-37	1081	1239	1143		F					
"	2 A		"	1055	444	421		F	2139	421	901		
Smith	1 H		34-19-36	451	12890	28580	35	F					
"	2 A		"	332	3234	9740	339	F					
HUMBLE OIL & REFG. CO.													
State D	1 H		20-19-37	573	1260	2165	18	P					
"	2 A		"	459	935	2040	19	P					
NOLEN, B.H.													
Humble Lau.	1 H		4-20-37	1069	404	371		F					new well-no infor.
"	2 I		"										
OHIO OIL CO.													
McGrail	1 N		26-19-36	96	9408	98000	96	F					S.I. 10/8/42
"	2 K		"	92	7888	85736		F					" "
OIL WELL DRLG. CO.													
Wood A	1 C		16-20-37	1104	2164	1960							
"	2 F		"	1104	628	569		F	2208	569	1256		
REPOLLO OIL CO.													
Byrd	1 B		11-20-36	1025	4088	3988		F					
"	2 G		"	993	3950	3958		F					
Roach	1 D		21-20-36	1148	828	721		F					
"	2 C		"	1116	828	742		F					
Williams	1 A		33-19-37	652	252	387	69	F					
"	2 O		"	1116	876	785	144	F					
SHELL OIL CO.													
Foster	1 P		34-19-36	1064	6235	5860		F					
"	2 D		"	1063	683	642	66	F	2127	642	1366	132	
State C	1 A		24-19-36	897			36	F					
"	2 H		"	958	3899	4070	50	F					
" D	1 J		19-19-37	1219	830	618		F					
"	2 I		"	1219	782	642		F					

MOVEMENT-CONTD.

COMPANY LEASE	WELL NO.	UNIT	S.T.R.	AVG. PROD. BBLS.	MO. GAS MCF	G.O.R.	MO. WATER BBLS.	METHOD PROD.	OIL	G.O.R.	GAS MCF	WATER BBLS.	REMARKS
TIDEWATER-CONTD.													
State C	4 E		30-19-37	1289	771	598			2543	1521	598		
CONTINENTAL-CONTD													
Anderson	1 O		8-20-37	1105	158	143			1105	158	143		
"	2 C		17-20-37	1105	122	110			2210	243	110		
"	3 F		8-20-37	1103	438	397			1103	438	397		
"	4 B		17-20-37	1073	649	605			1073	649	606		
"	5 F		"	1105	1265	1145							
"	6 A		"	1102	403	366			1102	403	366		
"	7 H		"	1103	459	416			1103	459	416		
"	8 G		"	1103	213	193			1103	213	193		
Culp	1 C		19-19-37	1136	1179	1038			1136	1179	1038		
"	2 E		"	1196	2204	1969							
"	3 F		"	1107	1533	1385							
"	4 G		"	1108	1993	1800							
"	5 H		"	1106	979	885			2212	1558	885		
"	6 B		"	1109	177	160			2216	356	160		
"	7 A		"	1106	619	560			2212	1239	560		
Culp B	1 J		31-19-37	1117	715	640			2234	1430	640		
"	2 I		"	1061	732	690			1061	732	690		
"	3 P		"	1117	2904	2600							
Graham St.	C 1 J		24-19-36	900	1538	1709							
"	2 S		"	827	355	429			1727	711	429		
"	3 G		"	820	929	1119							
"	4 O		"	828	857	1035							
"	5 B		25-19-36	1048	2570	2550							
"	6 O		"	1806	165	149			2153	321	149		
"	7 G		"	890	331	372			1720	640	372		
"	8 J		"	1044	522	500			1074	937	500		
" F	1 P		36-19-36	1137	420	369			1137	420	369		
"	2 I		"	1106	403	364			1106	403	364		
"	3 J		"	1138	139	122			1138	139	122		
"	4 O		"	1105	465	421			1105	465	421		
" G	1 O		17-19-37	1109	569	513			2218	1138	513		
"	2 J		"	1109	3876	3495							
"	3 F		"	1109	2218	2000	229		1109	2218	2000	229	
Hutter B	1 H		21-19-37	835	2782	3304			1673	859	3304		
"	2 E		28-19-38	836	1459	1715	81		835	1459	1715	81	
"	3 D		"	837	6279	5112							

TABLE NO. 6 - EUNICE- CONTD

COMPANY LEASE	WELL NO.	S.T.R.	AUGUST MONTHLY PROD.	MONTHLY MCF GAS	G.O.R.	MONTHLY WATER REPORT	METHOD USED	OIL	TEXAS. MCF GAS	G.O.R.	ALL. WATER BBLS.	REMARKS
CONTINENTAL-CONTD												
Lockhart A	3 B	30-21-36	370	148M	400	3100	P	370	148	400	3100	
"	4 E	"	529	212M	400	24800	GL	529	212	400	24800	
"	6 F	"	212	80M	400	248	GL	212	85	400	248	
" B	1 E	16-21-36	944	5844	6191	558	F	944	5844	6191	558	
"	2 D	"	941	5308	5634		F	1887	10653	5634		
"	3 A	"	1086	6236	6135		F	1086	6236	6135		
"	4 H	"	1083	2438	2383		F	1683	2391	2383		
"	5 L	"	619	4228	6931	496	F					
"	6 M	"	946	6274	6632	310	F					
" B	1 D	22-21-36	1007	3912	3885		F	1007	3912	3885		
"	2 E	"	1009	3491	3460	504						
"	3 L	"	1005	402	400	980	GL	1005	402	400	980	
"	4 M	"	1008	403	400	280	GL	2017	807	400		
"	1 D	27-21-36	930	13721	14754	217						
"	2 E	"	931	3498	3757	248		1861	6992	3757	496	
"	3 O	"	929	3968	4271	248		1831	7820	4271	496	
"	4 P	"	902	6600	7095	12400						
"	1 K	8-21-36	1066	3310	4972							
"	2 N	"	1064	4008	3767							
"	3 M	"	1055	6776	6362			2120	6024	3767		
"	4 L	"	1067	3458	3250							
"	1 N	17-21-36	669	1186	1773			2132	6929	3250		
"	2 F	"	671	699	1042	62		669	1186	1773		
"	3 E	"	667	2327	3789			1338	1391	1042	124	
"	4 K	"	674	270	400	620	GL	674	270	400	620	
"	5 L	"	395	4475	15170	124						
"	6 N	"	666	1231	1819			961	1748	1819		
"	1 A	18-21-36	1071	3996	3731							
"	2 J	"	1069	428	400	24800	GL	1069	428	400	24800	
"	3 I	"	1073	1089	1015	93		2144	2176	1015	93	
"	4 O	"	1070	428	400	9300	GL	1070	428	400	9300	
"	5 H	"	1072	2396	2235	186		1072	2396	2235	186	
"	6 B	"	1075	430	400	12400	GL	1075	430	400	12400	
" B	1 V	6-21-36	1082	3963	3663			1082	3963	3663		
"	2 N	"	1084	6545	6038							
"	3 Q	"	1080	2776	2570			2164	5561	2570		
"	4 S	"	1082	2817	2622			2165	5677	2622		

TABLE NO. 6 - EUNICE - CONTD

COMPANY LEASE	WELL NO.	S.T.R.	AUGUST MONTHLY PROD.	MONTHLY MCF GAS	G.O.R.	MONTHLY WATER REPORT	METHOD USED	OIL	TEXAS. MCF GAS	G.O.R.	ALL. WATER BBLS.	REMARKS
CONTINENTAL-CONTD												
State C	X P	20-21-36	1064	2039	1935			2114	4090	1935		
"	4 N	"	1051	843	802	124		2113	1686	802	248	
"	5 M	"	1049	935	891	124		2096	1868	891	248	
"	6 C	"	1046	2160	2065			1046	2160	2065		
"	7 K	"	1047	2279	2177	155						
"	8 L	"	1053	2420	2298			1053	2420	2298		
" D	1 L	11-21-36	982	3247	3307			1962	6468	3307		
"	2 M	"	980	6175	6301							
"	3 N	"	984	4042	4113			1967	8080	4113		
"	4 K	"	983	5920	6022							
" D	1 H	16-21-36	988	3218	3257			1977	6439	3257		
"	2 E	"	959	3908	3951							
"	3 A	"	967	3785	3835			1971	7559	3835		
"	4 O	"	992	2400	2419	310		1982	4794	2419	620	
"	5 G	"	990	5353	5407	310						
"	6 I	"	956	3543	3590	62		1971	6689	3590	124	
"	7 J	"	985	5675	5761							
"	8 P	"	984	6807	6918	1240						
DEVONIAN												
StaHensley	1 F	5-21-36	1060	4575	4316			1050	4575	4316		
"	2 B	"	1048	5198	4960							
"	3 A	"	1056	4941	4584			1056	4841	4584		
"	4 E	"	1053	3251	3116			2111	6578	3116		
"	5 D	"	1048	2352	2250			2102	2703	2250		
"	6 C	"	1050	5439	5180							
DRILLING & EXPL.												
State	1 P	12-21-35	317	6403	20200							
"	2 O	"	930	7905	8500			1247	10600	8500		
"	3 J	"	930	9700	10430			930	9700	10430		
FIELDS												
Turner St.	1 G	32-20-37	128	338	1000			GL	188	338	1500	
"	2 C	"	250	480	1920			GL	250	480	1920	
"	3 F	"	250	976	3300				200	976	4360	
GULF												
Bell C	1 D	15-21-36	1044	4049	3878	84						
"	2 P	"	1045	3379	2276			2089	4755	2276		
"	3 C	"	1046	4697	4181							

TABLE NO. 6 CONTD - EUNICE

COMPANY LEASE	WELL NO.	S.T.R.	AUGUST MONTHLY PROD.	MONTHLY MCF GAS	G.O.R.	MONTHLY WATER REPORT	METHOD USED	OIL	TRANS. MCF GAS	G.O.R.	ALL. WATER BBLS.	REMARKS
GULF-CONTD												
Crutt C	1 4	6-21-36	1048	2641	2520	179		1048	2641	2520	179	
"	2 A	"	1049	2832	2700			1049	2832	2700		
"	3 G	"	1050	1628	1550	525		1050	1628	1550	525	
"	4 F	"	1049	1300	1239	32		1049	1300	1239	32	
"	5 P	36-20-36	1049	2360	2250			2100	4725	2250		
"	6 C	6-21-36	1047	1120	1070	58		1047	1120	1070	58	
"	7 O	35-20-36	1050	308	293	129		1050	308	293	129	
"	8 B	6-21-36	1051	3889	3700							
Arnott Ramsey	1 H	2-21-36	1047	632	585			1047	632	585		
"	2 D	"	1047	392	374			2093	783	374		
"	3 L	"	1053	2780	2639	2217						
"	4 E	"	1048	522	498	657		2101	1046	498	874	
"	5 H	"	1046	3663	3502	2203	GL					
"	6 C	"	1084	683	796			1084	863	795		
"	7 B	"	1084	1009	931			1084	1009	931		
"	8 O	"	1068	3389	3518	153						
"	9 A	"	1048	919	877	62		1048	919	877	62	
"	10 G	"	1047	694	663	66		2047	694	663	66	
"	11 I	"	1064	517	477			2128	1017	477		
"	12 J	"	1048	2277	2250	596						
"	13 K	"	1046	1309	1251			1046	1309	1251		
"	14 K	"	1047	374	351			2095	735	351		
Bell Ramsey	1 E	9-21-36	1040	4664	4577	75						
"	2 E	"	970	5452	5588							
"	3 H	"	966	6376	6600	24						
"	4 O	"	967	1441	1490			1933	2880	1490		
"	5 A	4-21-36	1039	2192	2110	268		1039	2192	2110	268	
"	6 F	"	1068	1661	1555			1402	1280	1555		
"	7 M	"	1018	1666	1637	63		1998	3336	1637	126	
"	8 L	"	334	1004	3700							
"	9 E	"	1016	3176	3150	63		1016	3176	3150	63	
"	10 G	"	1018	1807	1775	84		2038	5428	1775	188	
Sunshine	1 N	30-20-37	1017	7001	6690			1017	7001	6690		
"	2 H	"	812	14967	18100	67		812	14967	18100	67	
"	3 K	"	609	2320H	3810			609	2320	3810		
White	1 F	25-20-36	1039	4163	4200							

TABLE NO. 6 CONTD - EUNICE

COMPANY LEASE	WELL NO.	S.T.R.	AUGUST MONTHLY PROD.	MONTHLY MCF GAS	G.O.R.	MONTHLY WATER REPORT	METHOD USED	OIL	TRANS. MCF GAS	G.O.R.	ALL. WATER BBLS.	REMARKS
HUGHES-CONTD												
StAggies	12 H	31-20-37	615	3553	5777			615	3553	5777		
State B	1 Z	21-21-36	371	5293	15022	65						
"	2 F	"	1054	2335	2216	482	GL	1054	2335	2215	482	
"	3 J	"	1121	2650	2131	5229	GL	1121	2660	2129	5239	
Q	4 B	"	1053	4180	3969	21		1054	4182	3969	42	
"	5 G	"	1053	2474	2350	1590	GL	1053	2474	2350	1580	
"	6 O	"	1054	4325	4103	21						
"	7 I	"	1053	2565	2436

TABLE NO. 6 CONT'D - MONUMENT

COMPANY LEASE	WELL NO.	S.T.R.	AUGUST MONTHLY PROD.	MONTHLY MCF GAS	G.O.R.	MONTHLY WATER PROD.	METHOD USED	OIL	TRANS. MCF GAS	G.O.R.	ALL WATER BBLS.	REMARKS
REPOLIS-CONT'D												
Phillips A	4 L	31-19-37	1117	1139	1020			1117	1139	1020		
" B	1 C	"	1108	942	850			1108	942	850		
"	2 D	"	1109	866	781			1109	866	781		
"	3 F	"	954	721	756			954	721	756		
"	4 E	"	1139	849	745			1139	849	745		
SKELL												
Cooper B	1 C	4-20-37	1101	776	705			1101	776	705		
"	2 D	"	1101	528	480			1101	528	480		
"	3 E	"	1101	879	799			1101	879	799		
State B	1 E	26-19-36	1119	1145	1232			1119	1145	1232		
"	2 D	"	1120	1820	1625			1120	1820	1625		
"	3 C	"	1120	1114	995			2230	2229	995		
"	4 F	"	1120	6003	5360							
State E	1 C	13-20-36	1085	369	341			2171	740	341		
"	2 D	"	1085	526	485	192		1085	526	485	192	
"	3 F	"	1085	552	510	244		1085	552	510	244	
"	4 E	"	1085	1288	1198							
SKELLY												
Van Etten	1 L	9-20-37	1270	394	310			1270	394	310		
"	2 M	"	1270	406	320			1270	406	320		
"	3 K	"	1270	441	347			1270	441	347		
"	4 E	"	1271	435	342			1271	435	342		
"	5 J	"	1270	470	370			1270	470	370		
"	6 O	"	1270	460	362			1270	460	362		
"	7 I	"	1270	433	341			1270	433	341		
"	8 P	"	1271	445	350			1271	445	350		
STANOLIND												
Gilluly A	2 A	21-20-36	1020	5270	5167			1020	5270	5167		
"	4 B	"	535 M	2687	5207			535	2687	5207		
"	9 L	"	946	4698	4965			946	4698	4965		
"	12 D	"	918	4652	5068			918	4652	5068		
" B	2 B	21-20-37	269	4745	17639			388	6844	17639		
"	4 D	22-20-37	119	3923	32970							
"	5 C	"	178	5411	30400			178	5411	30400		
SUN												
Unvesty	1 F	35-19-36	837	6319	7550							
"	2 O	"	530	2868	3069			1767	5423	3069		

TABLE NO. 6 - MONUMENT - CONT'D

COMPANY LEASE	WELL NO.	S.T.R.	AUGUST MONTHLY PROD.	MONTHLY MCF GAS	G.O.R.	MONTHLY WATER PROD.	METHOD USED	OIL	TRANS. MCF GAS	G.O.R.	ALL WATER BBLS	REMARKS
STANOLIND-CONT'D												
State J	4 C	17-19-37	989	948	989			1796	1776	989		
			35028	35560		208			35033		122	
Grand Total			631216	691967		15871			670932		16076	
				470936								
				171031								

$\frac{171031}{31}$ = 5517,000 Cu. Ft./ Dy

GULF OIL CORPORATION
BELL RANSEY LEASE
REPORT

	Total allow. 12-19-42 to 3-5-43	G.O.R.	TOTAL GAS	Total prod. 12-19-42 to 3-5-43	G.O.R.	TOTAL GAS
Bell Ransey #7	2984 bbl.	1910	5,661,240 cu/ft.	4159 bbl.	1910	7,943,690
Bell Ransey #8	1540 bbl.	*108987	167,839,980 cu/ft.	Shut in		

* = assumed allowable of 20 bbl/day
Production from #7 for period 12-1-42 to 3-5-43 over and above its normal daily allowable = 1195 bbls.
Production of 1195 bbls. from #7 transferred to #8
G.O.R. #8 (108,987) x 1195 bbl. = 130,239,165 cu/ft. gas
G.O.R. #7 (1910) x 1195 bbl. = 2,282,450 cu/ft. gas
Saving in gas by transfer of all. 127,957,015 cu/ft. gas = 1,660,000 cu/ft. gas/day

Allowable from #8 transferred to #9 3-9-43 to 4-1-43 but #9 produced only 1,219 bbl. of oil during this period, or 10 bbl. in excess of its own allowable.

STANOLIND OIL & GAS COMPANY
REPORT

Production and allowable transfer data from high to low ratio wells.
Wells with producing ratios below 7000 cu/ft/bbl.

LEASE WELL	S.T.R.	TEST RATE BBLS/DAY	PRODUCING GAS OIL RATIO
Gilluly A 3	25-20-36	45	1243
" A 5	"	53	6268
" A 6	"	48	1243
" A 8	24-20-36	74	4779
" A 10	"	47	1838
" A 11	"	14	6348
" A 13	"	24	2031
" A 14	"	67	3321

Wells with producing gas oil ratios above 7000 cu/ft/bbl.

LEASE WELL	S.T.R.	TEST RATE BBLS/DAY	PRODUCING GAS OIL RATIO	PENALIZED ALL. BBLS/DAY BASED ON LATEST TST.
Gilluly A 7	24-20-36	19	36798	7

Proposed transfer allowable plan

Transfer allowable from	Transfer Allowable To	Cu/ft. gas Conserved/day
Gilluly A 7	Gilluly A 14	29,339

MONUMENT

Production and allowable transfer data from high to low ratio wells
Wells with producing ratios below 6000 cu/ft/bbl

LEASE WELL	S.T.R.	TEST RATE BBLS/DAY	PRODUCING GAS OIL RATIO
Gilluly A 2	24-20-36	111	553
" A 9	"	113	463
" A 12	"	63	663

Exhibit C

CONTINENTAL OIL COMPANY
MEYER A-17 LEASE
REPORT

WELL	MARCH ALLOWABLE	FEB. 1943 G.O.R.	MARCH TOTAL GAS MCF	(if each well produced at top allowable rate)
3	1209	1507	1822	
5	1209	11200	13541	
6	1209	1790	2164	
TOTALS	3627		17527	
				(if each well produced at assigned allowable rate)
3	1209	1507	1822	
5	558	11200	6250	
6	1209	1790	2164	
TOTALS	2976		10236	
				(top allowable transferred from No. 5 to Nos. 3 & 6)
3	1643	1293	2124	
5				
6	1984	1425	2827	
TOTALS	3627		4951	

GAS SAVED DURING MARCH, 1943 (MCF)
Based on top allowable 12576
Based on penalized allowable 5285

SHELL OIL COMPANY, INC.
REPORT

LEASE WELL	DAILY ALLOW. MARCH-1943	G.O.R.	TOTAL GAS FEB DAY	DAILY ALLOWABLES 3-1943 #4 TRANS. TO 1-2-3	G.O.R.	TOTAL GAS FEB DAY
State K # 1	39	11200	436800	52	11200	582400
2	39	2065	80535	52	2065	107380
3	39	9370	365430	52	9370	487260
4	39	22700	885300	S.I.	S.I.	
			1,768,065			1,177,020
			1,177,020			
Total gas savings/day =			591,045 cu/ft			
				#1 ALL. TO #2		
Coleman # 1	39	11100	432900	S.I.	S.I.	S.I.
" 2	39	980	38220	78	980	76440
			471,120			
			76,440			
Total gas savings/day =			394,680 cu/ft			

MONUMENT

				#4 ALL. TO # 1-2-3		
State B # 1	40	1140	45600	54	1140	61560
" 2	37	2280	84360	51	2280	116280
" 3	39	389	15171	53	389	20617
" 4	42	15600	656800	S.I.	S.I.	S.I.
			791,931			198,457
			198,457			
Total gas savings/day =			593,474 cu/ft			

CONTINENTAL OIL COMPANY
MEYER A-17 LEASE
REPORT

WELL	MARCH ALLOWABLE	FEB. 1943 G.O.R.	MARCH TOTAL GAS MCF	(if each well produced at top allowable rate)
3	1209	1507	1822	
5	1209	11200	13541	
6	1209	1790	2164	
TOTALS	3627		17527	
				(if each well produced at assigned allowable rate)
3	1209	1507	1822	
5	558	11200	6250	
6	1209	1790	2164	
TOTALS	2976		10236	
				(top allowable transferred from No. 5 to Nos. 3 & 6)
3	1643	1293	2124	
5				
6	1984	1425	2827	
TOTALS	3627		4951	

GAS SAVED DURING MARCH, 1943 (MCF)
Based on top allowable 12576
Based on penalized allowable 5285

SHELL OIL COMPANY, INC.
REPORT

LEASE WELL	DAILY ALLOW. MARCH-1943	G.O.R.	TOTAL GAS FEB DAY	DAILY ALLOWABLES 3-1943 #4 TRANS. TO 1-2-3	G.O.R.	TOTAL GAS FEB DAY
State K # 1	39	11200	436800	52	11200	582400
2	39	2065	80535	52	2065	107380
3	39	9370	365430	52	9370	487260
4	39	22700	885300	S.I.	S.I.	
			1,768,065			1,177,020
			1,177,020			
Total gas savings/day =			591,045 cu/ft			
				#1 ALL. TO #2		
Coleman # 1	39	11100	432900	S.I.	S.I.	S.I.
" 2	39	980	38220	76	980	76440
			471,120			
			76,440			
Total gas savings/day =			394,680 cu/ft			

MONUMENT

				#4 ALL. TO # 1-2-3		
State B # 1	40	1140	45600	54	1140	61560
" 2	37	2280	84360	51	2280	116280
" 3	39	389	15171	53	389	20617
" 4	42	15600	656800	S.I.	S.I.	S.I.
			791,931			198,457
			198,457			
Total gas savings/day =			593,474 cu/ft			

MONUMENT - TABLE NO. 6 CONT'D

COMPANY LEASE	WELL NO.	S.T.R.	AUGUST MONTHLY PROD.	MONTHLY MCF GAS	G.O.R.	MONTHLY WATER PROD.	METHOD USED	TRANS. MCF OIL	TRANS. MCF GAS	TRANS. G.O.R.	ALL WATER BBLS	REMARKS
SUN-CONT'D												
Mavesty	3 H	35-19-36	668	2890	3330	19		1427	474	3330	38	
"	4 J	"	932	2455	2475	61		1208	2990	2475	122	
"	5 G	"	549	29755	60500							
"	6 B	"	214 M	1126	5260							
Superior St.	1 A	2-20-36	971	2541	2617			971	2541	2617		
"	2 B	"	1003	2538	2610			1003	2618	2610		
"	3 E	"	1003	2618	2610			1003	2618	2610		
"	4 G	"	971	2541	2617			971	2541	2617		
TEXAS												
Cooper	1 B	5-20-37	1296	1104	852			1296	1104	852		
"	2 A	"	1297	1097	846			1297	1097	846		
"	3 G	"	1298	1088	838			1298	1088	838		
"	4 H	"	1296	1116	861			1296	1116	861		
Hattern	1 L	20-19-37	962	912	948			962	912	948		
"	2 M	"	957	1107	1157			957	1107	1157		
"	3 N	"	969	1098	1133			969	1098	1133		
"	4 K	"	974	982	1008	41		974	982	1008	41	
Phillips	1 D	6-20-37	1192	702	589	37		1192	702	589	37	
"	2 C	"	1193	712	597			1193	712	597		
"	3 E	"	1192	685	575			1192	685	575		
"	4 F	"	1192	776	651			1192	776	651		
Saunders	1 M	18-19-37	1103	1219	1105			1103	1219	1105		
"	2 O	"	1133	1589	1402			1133	1589	1402		
"	3 J	"	1064	1356	1274			1064	1356	1274		
"	4 K	"	1102	1181	1072			1102	1181	1072		
State E	1 H	1-20-36	1046	523	500			1046	523	500		
"	2 L	"	1046	562	538	44		1046	562	538	44	
"	3 N	"	1047	554	529			1047	554	529		
"	4 K	"	1047	547	522			1047	547	522		
State H	5 A	20-20-37	1253	1568	1312			1226	1608	1312		
"	6 B	"	1226	1399	1141			1226	1399	1141		
"	7 C	"	1315	1423	1080			2163	2336	1080		
"	11 D	"	845	1329	1573							
TIDEWATER												
State J	1 E	17-19-37	1116	1479	1325							
"	2 D	"	1147	865	754			2263	1706	754		
"	3 P	"	637	1272	1520	83						

TABLE NO. 7

SUMMARY OF TABLES 4, 5 & 6.

	NO. LEASES	NUMBER WELLS TOTAL	NUMB.	HI GOR	AUG. AVG. OIL PROD.	AUG. AVG. GAS PROD. MCF	AVG. GOR	AVG. WATER PROD. BBLS.	WELLS SHUT IN	ESTIMATED CONDITIONS AFTER TRANSFERS OIL PROD.	GAS	AVG. GOR	WATER BBLS.	SAVING IN MCF/MONTH	SAVING IN MCF/DAY
MONUMENT FIELD															
Single Unit Leases	54	54	5	5	46310	138436	3010	7774		46310	138436	3010	7774	-	-
Two Unit Leases	68	136	10	12	128149	254177	2013	11421	25	128149	97475	1872	4302	48252	1557
Three or more Unit Leases	66	312	13	17	321216	691967	2154	18871	69	321216	470936	1465	16078	171031	5517
TOTAL MONUMENT	207	502	28	32	495675	1084580		38066	94	495675	706847		28154	219283	7074
EUNICE FIELD															
Single Unit Lease	43	43	18	9	30423	97965	3220	45426		30423	97965	3220	45426		
Two Unit Leases	44	88	16	10	75141	370378	4985	23872	19	75141	333068	4433	26285	37310	1204
Three or More Unit Leases	62	357	43	25	315695	1138635	3607	216452	104	315695	886756	2809	178291	251839	8124
TOTAL EUNICE	178	488	77	44	421259	1606978		285750	123	421259	1317829		248002	289149	9327
Eunice & Monument														85562	2761
Single Unit leases														422870	13641
Two Unit leases														508432	16401
Three or More Unit Leases															

STATELINE (MONUMENT)-CONTD.

Wells with producing ratios above 6000 cu/ft/bbl.

LEASE WELL	S.T.R.	TEST RATE BBLS/DAY	PRODUCING GAS OIL RATIO	PENALIZED ALLOW. BBLS/DAY (BASED ON LATEST TEST)
Gilluly A 4	24-20-36	12	26,333	9
" B 2	21-20-37	53	8605	27
" B 4	22-20-37	50	33647	7
" B 5	"	17	37061	6

Proposed allowable transfer plan

Transfer Allow. from	Transfer allow. to	Cu/ft. gas Conserved Day
Gilluly A 4	Gilluly A 9	215,388
Gilluly B 4	Gilluly B 2	175,294
Gilluly B 5	Gilluly B 2	170,856

GHIO OIL COMPANY
STATE HANSON LEASE
MONUMENT

LEASE WELL	DAILY ALL. March, 1942	G.O.R. March-42	TOTAL GAS CU/FT/DAY	DAILY ALL. #4 TRANSFERRED TO NO. 1 & 2	G.O.R. TESTS @ RATE OF 70/BBL/DAY	TOTAL GAS CU/FT. DAY
St. Hansen #1	10	370	14800	52	370	19240
St. Hansen #2	41	370	15170	53	370	19610
St. Hansen #4	24	9585	230040	Shut In		
Total gas			260,010			38850
			38,850			

Total saving of gas/day by trans. 221,160 cu/ft.

SUN OIL COMPANY
MAVESTY LEASE
MONUMENT

Mavesty #5 daily allowable 23 bbl. Gas oil ratio October, 1942 = 50,500

LEASE WELL	DAILY ALLOW. APRIL-1943	G.O.R.	TOTAL GAS PER DAY
Mavesty #3	31	3623	112,313 cu/ft.
Mavesty #4	31	4138	128,278 "
Mavesty #5	23	50,500	1,161,500 "
Daily total gas from 3, 4 & 5 =			1,402,091 "
			338,500 "
Total daily gas savings			1,069,791 "

	DAILY ALLOW. 4/43 (Avg. per #5 allow.)	G.O.R.	TOTAL GAS PER DAY
	42	3853	160,566 cu/ft.
	43	4138	177,934 "
Trans. to 3 & 4 S.I.			
Daily total gas from 3 & 4 (includes allow. from #5)			338,500 cu/ft.

17 bbl. per day transferred from #5 to #4
11 bbl. per day transferred from #5 to #3

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